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THE ROLE OF THE ENTREPRENEURIAL
LOGIC IN EXPORT PERFORMANCE.
THE CASE OF ENTREPRENEURS IN
TRANSITION ECONOMIES.

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The Role Of The Entrepreneurial Logic In Export Performance.

The Case Of Entrepreneurs In Transition Economies.

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INFORMA

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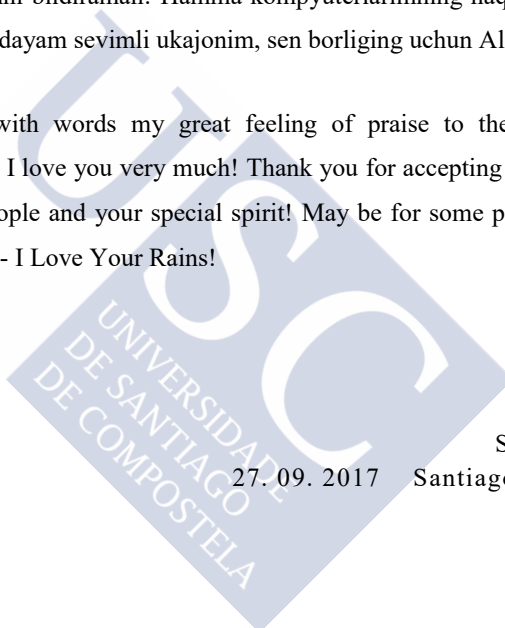
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Resumo

Galego

Esta tese de doutoramento no campo do emprendemento consiste en tres artigos individuais. As análises dos tres artigos fíxose dende a perspectiva da teoría da efectución.

Teoría da efectución

En Sarasvathy (2001), avánzase unha teoría nova, a "teoría da efectución", que afirma que a mente emprendedora utiliza dous modos diferentes: a efectución e a causación. Dacordo con esta autora o enfoque efectual substitúe a lóxica empresarial de predición por unha de control. Afirma que a efectución é máis utilizada por emprendedores expertos que teñen experiencia empresarial, mentres que a causación utilízase principalmente por emprendedores novéis, ou por xestores de grandes organizacións que dispoñen dunha formación de base en administración de empresas (Dew et al. 2009).

A causación enfoca os problemas co fin en mente, ca formulación dun obxectivo específico e ca recolla dos recursos e capacidades relacionados ca consecución dese obxectivo. A lóxica causal predice o escenario óptimo.

Isto contrasta ca lóxica efectual, que intenta "controlar" o futuro en troques de "predicilo", facendo uso dos recursos dispoñíbeis mentres trata de obter os mellores resultados. A teoría da efectución afirma que o emprendedor avalía as alternativas, en particular a elección de socios estratéxicos, en relación ao seu potencial de éxito futuro. Os obxectivos adaptaciónanse ás eleccións e, en particular, ás necesidades dos socios estratéxicos (Schluter et al.2011).

Nun proceso de decisión causal, é necesario procesar unha cantidade significativa de información para planificar o futuro ou para desenvolver futuros escenarios. Polo contrario, a lóxica da efectución ten como punto de partida a análise dos recursos dispoñíbeis. O emprendedor segue or ritmo da recollida de información, ou mesmo adiántase a ela. O

obxectivo modifícase continuamente dacordo ca información recollida e ca xente ca que se interactúa, expandindo así os recursos dispoñíbeis e creando un novo artefacto imprevisto.

A teoría da efectución (Sarasvathy 2001) céntrase na toma de decisións en condicións de elevada incerteza cando o futuro non pode predicirse mediante inferencia estatística. Nesas condicións, os emprendedores, xestores ou políticos poden desenvolver oportunidades baseadas nos medios dispoñíbeis seguindo o principio de perda aceptábel, en troques do de maximización do rendemento esperado. Poden así crear novas iniciativas e economías non baseadas nunha estratexia estritamente planeadas, senón resultantes da interacción desaxentes ca súa rede político-social (Kalinic et al., 2014).

Ademáis, Sarasvathy (2003) propón un termo especial: "espazo efectual de problemas" para describir os entornos empresariais incertos. Afirmar que unha elevada incerteza knightiana, xunto ca ambigüidade de obxectivos e a isotropía do entorno, constitúen o espazo efectual de problemas (Sarasvathy et al. 2008). A ambigüidade de obxectivos refírese á existencia dun só obxectivo xeral, pero con resultados que non están dados, nin ben ordeados, nin traducidos a sub-obxectivos/plans de acción específicos. É máis probábel que o emprendedor teña unha ambición vaga, xeral, final (visión), que poida ser refinada e mesmo completamente transformada mediante a interacción con outra xente e co entorno. En canto a isotropía, indica que non está claro qué elementos do entorno poden ser útiles. Neste tipo de entornos, o proceso de recollida de información é difícil e non pode prepararse do xeito tradicional, xa que sería difícil coñecer a qué información prestar atención, e cal ignorar.

Dacordo con Sarasvathy, o espazo efectual de problemas obriga a tomar decisións efectuais para conseguir mellores resultados cando existe un elevado nivel de incerteza.

O obxectivo desta tese é estudar o concepto de efectución ao examinar as decisións emprendedoras tomadas nun entorno empresarial altamente incerto nunha economía en transición, usando o caso dos emprendedores en Uzbekistán. No entorno empresarial incerto das economías en transición é habitualmente inútil ou simplemente imposible facer predicións, e polo tanto as estratexias empresariais clásicas baseadas na predición non teñen sentido para os emprendedores que operan nesas economías.

Xa que a teoría da efectución considérase como unha teoría comportamentista da transformación (Dew et.al., 2008) é altamente relevante para as economías en transición. O aspecto transformador nestas economías refírese as transformacións nas institucións, os mercados e as empresas no seu conxunto, porque nestas economías o proceso de cómo as institucións crean emprendedores e cómo os emprendedores crean mercados e os mercados crean novos emprendedores.

Capítulo 1

Este capítulo dedícase a unha discusión teórica do concepto de incerteza baixo o enfoque da teoría da efectución e a teoría institucional. O principal obxectivo deste capítulo é o de escudriñar teóricamente as condicións do espazo efectual de problemas descrito pola teoría da efectución e comparalo co entorno empresarial creado nas economías en transición nos países de Asia Central. En particular, a atención céntrase principalmente no entorno institucional de Uzbekistán.

A análise revelou que o entorno altamente incerto descrito polo término espazo efectual de problemas comparte as mesmas características dun entorno empresarial nunha economía en transición.

Esta discusión da incerteza orixinada polas características institucionais e as regulacións públicas a través do enfoque da teoría da efectución, e a primeira na literatura, e é a contribución deste capítulo, que abre un novo espazo de discusión dentro da teoría da efectución ao propoñer ás economías en transición como unha realización empírica do espazo efectual de problemas ideal que combina elevada incerteza knightiana con ambigüidade de obxectivos e isotropía do entorno.

Capítulo 2

Observamos que mentres os emprendedores enfrontan retos altamente incertos, os países con economías en transición conseguiron un crecemento enorme na súa porción de pequenas e medianas empresas (PEMEs). Polo tanto, no segundo capítulo invéstase o efecto da incerteza na porción de PEMEs no conxunto do tecido empresarial. Supoñendo que a

incerteza leva aos emprendedores a cambiar a lóxica emprendedora a unha lóxica efectual para evitar o fracaso empresarial, propuxemos que non existen efectos significativos do nivel de incerteza no entorno sobre a porción de PEMEs no número total de empresas dun país. Este capítulo presenta dous obxectivos principais.

Para ver a relación entre a incerteza no entorno e o tamaño do sector PEMEs foi necesario comparar varios países con economías en transición cun conxunto de países máis desenvolvidos.

Nunha primeira etapa, adoptouse unha medida da incerteza no entorno. A incerteza específica en economías en transición proposta por Susjan e Redek (2008) xorde de tres fontes principais: o legado do sistema socialista, a inestabilidade social e política e as transformacións sistémicas. Adaptamos este índice de incerteza tendo en consideración factores específicos relacionados cas economías en transición dos países que formaban parte da antiga Unión Soviética, e dos países deste tipo situados en Asia Central en concreto. Por exemplo, os niveis de intervención gubernamental e corrupción nestes países son aínda moi elevados, polo que a ponderación deses compoñentes no noso índice é maior, para reflectir o seu impacto sobre as actividades cotiás dos emprendedores. Por outra parte, non incluímos a dimensión referente á medida das regulacións laborais, xa que este aspecto atópase baixo revisión pola Organización Internacional do Traballo (por exemplo, debido á ausencia de salarios mínimos nalgúns país con resultados moi elevados nesta medida particular).

Na segunda etapa preparouse un panel de datos agregados con información sobre microempresas, pequenas empresas e medianas empresas na economía de cada país, tomados da *International Finance Corporation* (IFC), pertencente ao Grupo do Banco Mundial. A base de datos contén un conxunto desequilibrado de datos para diferentes países. Para obter resultados máis robustos utilizáronse os datos do período 2000-2008. Como medida do tamaño do sector PEMEs tomouse a porción do emprego total creada por PEMEs.

Na terceira etapa clasificáronse os países en varios grupos. O tamaño da mostra é de 53 países que presentan a información necesaria para o periodo considerado (477 observacións). Os estudos previos sobre o efecto da incerteza ou do entorno intentaban comparar tódolos países simultaneamente, sin ter en conta ningunha característica específica de rexións, países, ou mesmo grupos de países (p. ex.: Rocha, 2012; West e Drnevich, 2010; Ghosal e Ye, 2015).

Deste xeito ignórase o feito de que o sector das PEMEs nas economías en transición e aínda novo e, polo tanto, máis pequeno comparado cos presentes en economías desenvolvidas, e non necesariamente debido ao impacto do entorno. O noso estudo ten en conta a qué tipo de economía pertence cada país, clasificados en economías no en transición, economías en transición, e distinguindo nestas distintos tipos de transición.

A cuarta etapa é unha revisión da literatura, para atopar qué outros factores considéranse que contribúen ao tamaño do sector PEMEs ademais do nivel de incerteza, que deberían utilizarse como controis.

Na quinta etapa estimouse o modelo utilizando o método de mínimos cadrados ordinarios (MCO) separadamente para seis grupos diferentes de países: desenvolvidos, emerxentes, en transición, países do Leste de Europa en transición, países pertencentes á antiga Unión Soviética en transición, e países de Asia Central pertencentes á antiga Unión Soviética. Tamén se utilizou o método de mínimos cadrados con variables ficticias (MCVF) para o conxunto de tódolos países.

Na sexta etapa realizáronse estimacións de modelos de datos de panel, en concreto utilizando efectos fixos e efectos aleatorios, realizando o contraste de Hausman. Os resultados deste contraste indican que o modelo de efectos aleatorios é o máis axeitado para traballar con esta mostra no modelo con variables de control, mentres que o modelo de efectos fixos sería o máis axeitado para unha regresión sen variables de control.

Na sétima etapa estimouse un modelo de efectos mixtos en dúas etapas. Este é un enfoque máis sofisticado que permite incorporar características individuais das variacións temporais nun único modelo, estimando simultaneamente curvas para países individuais e unha curva promedio para o conxunto da mostra (Goldstein, 2010). Os efectos mixtos consisten en efectos fixos (ou sexa, valores promedio para os parámetros da mostra completa) e tamén efectos aleatorios que son diferentes para cada grupo ou mesmo para cada país. O modelo de efectos mixtos utilízase habitualmente cando os datos agrúpanse dalgún xeito, como sucede no noso caso.

O modelo de efectos mixtos inclúe tanto efectos fixos, medidos polas estimacións de mínimos cadrados ordinarios e efectos aleatorios. Na parte fixa da estimación identificouse unha relación positiva entre o nivel de certeza e o tamaño do sector PEMEs. Con todo, esta relación non é significativa estatisticamente, debido a existencia de diferencias individuais entre países. As estimacións dos efectos aleatorios por grupos de países e para países individuais confirmou que a relación entre a incerteza e o tamaño do sector PEMEs é diferente para diferentes grupos de países.

Moitos países desenvolvidos experimentaron unha redución no tamaño do seu sector PEMEs, ao tempo que encabezaban os *rankings* nas dimensións de liberdade empresarial e política medidas polo índice de incerteza. Polo contrario, o elevado nivel de incerteza non afectou ao crecemento do tamaño do sector PEMEs noutros países con economías en transición. En particular, nos países en transición pode observarse que o crecemento da porción de PEMEs no recuento total de empresas é máis rápido que a mellora que experimentan no seu entorno cara un entorno menos incerto.

Estes resultados permiten concluir que o efecto da incerteza ambiental no tamaño do sector PEMEs non é un efecto robusto, e polo tanto podemos dicir que o nivel de incerteza non determina o tamaño do sector PEMEs dun país. Este achádego é importante e o enfoque de investigacións futuras debería centrarse non na potencial existencia de efectos derivados da incerteza, senón en determinar qué tipo de empresas medran mellor en entornos altamente incertos e cómo a incerteza ambiental impacta sobre a calidade e as estratexias das PEMEs. Adicionalmente, deberían realizarse investigacións adicionais para identificar os factores que proporcionan oportunidades atractivas para que os emprendedores creen empresas nos entornos altamente incertos das economías en transición.

Capítulo 3

Neste capítulo utilizamos a teoría da efectución (Sarasvathy, 2001) para investigar o efecto do tipo de lóxica emprendedora, causal ou efectual, no rendemento exportador das empresas de Uzbekistán.

Uzbekistán é un país de Asia Central cunha economía en transición, e o punto de partida da análise é que a lóxica efectual é a única plausíbel para os emprendedores deste país que busquen un exitoso desempeño exportador. A partir da revisión da literatura prantéxanse as seguintes hipóteses:

H 1: Non existen impactos dos niveis de experiencia emprendedora, internacional ou internacionalizadora, nen do nivel de educación na elección da lóxica efectual fronte á lóxica causal no caso dos emprendedores exportadores de Uzbekistán.

H2: A relación entre a lóxica efectual e o rendemento exportador é positiva para as PEMEs exportadoras en Uzbekistán.

H3: A relación entre a lóxica causal e o rendemento exportador é positiva para as PEMEs exportadoras en Uzbekistán.

H4: A relación positiva entre a lóxica efectual e o rendemento exportador é máis intensa cando as incertezas ambientais percibidas son maiores.

A análise de datos realizouse utilizando mínimos cadrados parciais (MCP), unha técnica de modelización de ecuacións estruturais que utiliza un enfoque baseado na análise de compoñentes principais (Chin 19989. Aplicouse a modelización de sendas por mínimos cadrados parciais (MS-MCP) na linguaxe de programación estatística R (Sánchez, 2013) para contrasta-las hipóteses. As rutinas dispoñíbeis na linguaxe R permiten utilizar variables moderadoras e implementar tanto escalas reflectivas como formativas. Ademais, MS-MCP non impón ningún suposto sobre a distribución dos datos.

A avaliación de datos fíxose utilizando tres diferentes modelos MS-MCP, seleccionando o máis axeitado para este caso específico:

Modelo 1. Tódolos resultados dentro do modelo interno do diagrama MCP foron satisfactorios e significativos. O efecto da efectución sobre o rendemento exportador foi positivo e moito maior que o efecto da causación, e estatisticamente significativo. No modelo externo (referido á medición das variabéis latentes) , as variables Efectuación e Incertezas Ambientais Percibidas (IAP) presentaron signos negativos nalgúns dos seus indicadores.

Estes son habitualmente o resultado da pauta de correlacións entre os indicadores dos constructos medidos formativamente, polo que poden poñer en cuestión a natureza dos mesmos, aínda que a capacidade predictiva dos tales constructos non estea ameazada de colinearidade (Cenfetelli e Bassellier, 2009). Aínda así, implementáronse pasos adicionais para mellorar as escalas de medida.

Modelo 2. Neste modelo conservouse únicamente un indicador para cada dimensión da efectución e a IAP vencellados directamente aos constructos respectivos, para evitar as correlacións existentes entre os indicadores medidos formativamente. Os resultados da parte estrutural do modelo foron moi semellantes aos do Modelo 1, afianzando unha vez máis a noción de que as estimacións dos modelos MCP estruturais apenas varían cando se eliminan indicadores formativos insignificantes ou altamente colineais, motivando a decisión de reter tales indicadores no modelo de senda MCP (Henseler et al. 2009). Dacordo con Jarvis et al. (2003) mantiveronse os indicadores formativos que poden xustificarse conceptualmente, fosen cales fosen os seus resultados estatísticos, para evitar cambiar o contido do índice formativo e distorsionar a variable latente. Isto implica aceptar que o Modelo 1 é o correcto.

Modelo 3. Modelos de senda MCP con constructos de orde superior. Este é un método alternativo para a modelización de sendas MCP para os constructos onde os indicadores da variable Efectución agréganse en dimensións diferentes como Experimentación, Pérdida aceptábel, Flexibilidade, etc. Neste caso, o efecto da variable Efectución reduciuse considerablemente ata valores similares ao efecto da variable Causación. Os coeficientes dos efectos das variables Efectución, Causación e Incerteza sobre a variable Rendemento Exportador resultaron significativos dacordo cun procedemento *bootstrap* con 5.000 mostraxes.

Polo tanto, nos primeiros dous modelos, o constructo completo Efectución presenta un efecto maior sobre o Rendemento Exportador, mais os seus indicadores presentan ponderacións insignificantes. No Modelo 3, onde cada dimensión considérase como un constructo independente que contribúe a outro agregado, o efecto da Efectución é considerablemente menor, mais os indicadores das diferentes dimensións elevan as súas ponderacións. Unha conclusión que pode derivarse destes resultados é que a nosa mostra de 103 observacións é

pequena e homoxénea de máis para poder distinguir debidamente entre as diferentes dimensións do constructo Efectuación, aínda que grande dabondo para medir a Efectuación no seu conxunto.

O constructo Causación non presentou problemas metodolóxicos, obténdose bos valores dos coeficientes para as medidas reflectivas deste constructo. Como se afirmou nos capítulos precedentes desta tese, nos países en transición hai unha falla das habilidades, programas de educación, entorno empresarial e a información necesaria para poder aplica-la lóxica causal. No cuestionario utilizado neste capítulo incluíronse varias preguntas de control para avaliar a implementación na realidade de técnicas de lóxica causal como a análise competitiva. As respostas a estas preguntas confiren a idea xeral de que a maioría dos exportadores non utilizan técnicas causais, aínda que a interpretación de preguntas de control que non teñen sido contrastadas en diferentes investigacións debe sempre realizarse con coidado.

Resumindo, os resultados dos Modelos 1 e 3 amosan un efecto positivo das decisións baseadas na lóxica efectual sobre o rendemento exportador. Aínda que tamén atópase un efecto positivo das decisións baseadas na lóxica causal, as respostas recibidas ás preguntas de control incluídas no cuestionario suxiren que apenas se toman decisións causais na práctica.

Conclusiones

En conxunto, esta tese céntrase en tres baleiros identificados na literatura sobre emprendemento.

Primeiro, a necesidade de máis estudos no campo do emprendemento nos países de Asia Central. O contexto dos mercados das economías en transición de Asia Central é moi dinámico e hostil, caracterizado pola inestabilidade e a incerteza, tanto económica como social e política (Newman, 2000). Polo tanto, os resultados das actividades emprendedoras son máis incertos do que suxire a literatura previa sobre a transformación económica das economías en transición (Zahra, 1993).

Segundo, existen moi poucos estudos que discutan o tipo de lóxica emprendedora (causal ou efectual) que se aplica nos países con economías en transición.

Terceiro, aínda que a investigación sobre a lóxica efectual abarca tamén os campos dos procesos de internacionalización dos procesos empresariais e o emprendemento internacional, é necesario enriquecela máis con estudos sobre a actividade exportadora das empresas.

A conclusión xeral desta tese é que aínda que nas economías en transición, e en particular, nas economías de Asia Central que previamente formaban parte da Unión Soviética, predomina a incerteza, e nelas os emprendedores e os seus empregados carecen dunha experiencia empresarial de calidade, as accións e as decisións que toman poden estar respaldadas por conceptos vencellados á lóxica efectual. Así, o concepto de efectución pode, nestas economías, proporcionar a conexión entre o coñecemento teórico e a práctica empresarial que é necesaria para poder avaliar as políticas de fomento do emprendemento que potencialmente se desenvolvan nelas.



The Role Of The Entrepreneurial Logic in Export Performance

The Case of Entrepreneurs In Transition Economies

General Introduction

This section provides a general rationale and outlines the scope of this dissertation by introducing a brief outline of each individual study.

During the teaching process of business management strategies for university students and business managers often we come across with a feeling that there exists a kind of bridge between the theoretical tools provided in the books and the way of their implementation in real business environment. Specifically this is true when we talk about business decisions and actions based on preliminary predictions. Effectuation theory is one of the theories that seem to aim to cover this bridge in many cases.

Theory of Effectuation (Sarasvathy, 2001) proposes that the entrepreneurial mind uses two different types of modes – effectuation and causation. The causal logic approaches a problem with the end in mind, with a specific goal formulated and then related resources and capabilities are gathered to achieve that goal. Whereas effectual logic attempts to ‘control’ the future instead of ‘predict’, by making use of the resources in hand while trying to achieve the best results.

This theory focuses on the decision-making in conditions of high uncertainty when the future cannot be predicted through statistical inferences. In such conditions, based on the means available, entrepreneurs, managers, politicians may develop opportunities based on the affordable loss principle rather than on the maximization of expected returns. They create effective new ventures and even economies not based on a strictly planned strategy but as an outcome of interaction with their social, political network. (Kalinic et al., 2014).

The aim of this thesis is to study the concept of effectuation in examining the entrepreneurial decisions made in a highly uncertain business environment of a transition economy, using the case of entrepreneurs in Uzbekistan. In the uncertain business environment of transition economies it is usually useless or simply impossible to make predictions, and hence classical prediction based business strategies are senseless for entrepreneurs performing in these economies.

Dew et.al. (2008) named an effectuation theory as a behavioural theory in transformation. By its turn, the aspect of transformation is highly relevant to the economies in transition, as this is related to transformation of institutions, markets and firms as a whole. In these economies it is more vivid the process of how institutions create entrepreneurs and how the entrepreneurs create markets and also how markets create new entrepreneurs. Therefore as stated in Smallbone & Welter (2004) the characteristics of entrepreneurs in transition countries and their economic impact cannot be assumed to be the same as those in Western countries.

To be causal (or to make decisions based on causal logic) means to possess with formal management, marketing, financial management skills, to possess with marketing secondary and primary research data, to possess with enough financial resources and to be in a well developed stable institutional environment. These criteria are not accomplishable in the transition economy. The entrepreneurship and private sector are new for any country with transition economy and therefore a business education do not have a good quality. The information about customers, rules and regulations, competitors and foreign markets is hardly obtainable. The banks and other financial entities do not possess with enough financial resources for entrepreneurs, and people do not possess with own savings due to the previous communistic regime of these countries. The environment is highly uncertain due to the constant institutional changes, corruption and unavailability of information about the changes in legislation. The market context of transition economies is dynamic and hostile, characterized by economic, social, and political instability and uncertainty (Newman, 2000).

This leaves much space for effectuation – which means being entrepreneurial in a highly uncertain environment using the resources, networks and skills available in hand. *Constrained creativity*, the feature of effectual approach, seems the most viable strategy in order to be able to survive and moreover to grow a business in a transition environment. Due

to these circumstances entrepreneurs of transition economies have to rely on three things: who they are; what they know; and whom they know and a constrained creativity is a powerful element of their survival strategies.

Since the key factor in Effectuating is a non-prediction strategy in uncertainty we started our study (in chapter 1) by examining theoretically the concept of uncertainty given in the Effectuation theory and the concept of uncertainty existent in the transition economies. Building on Effectuation theory and Institutional theory, we brought together specifications of an effectual space and compare them with ones of transition economies. A special focus was given to the discussion of uncertainties in Central Asian countries and other former Soviet Union countries, where the source of uncertainties is a lack of stable institutional structure and therefore a highly volatile business environment. The Effectual Features of the Space in Uzbekistan was discussed in detail since the uncertainties stemmed from the political, economical, social environment in Uzbekistan do not adjust exactly to the typical features of a transition economy, due to the specificities created by the particular set of policy decisions adopted during the first decade of Uzbek independence, the so-called 'Uzbek Path' (Gleason 2003).

No previous study was done which links Institutional and Effectuation Theories. Each component of an effectual space was discussed in the current practices of entrepreneurs in Uzbekistan. The discussion of uncertainties, stemmed from institutional settings and government regulations, through the lens of effectuation theory is the first in the literature and this is our contribution to this field.

Moreover we opened a new discussion area within the Effectuation theory by proposing that the ideal effectual space with high (Knightian) uncertainty, together with goal ambiguity and environmental isotropy is found in the transition markets. And this by its turn brings forward the idea that the entrepreneurs in the transition economies are 'forced' to use effectual logic by their business environments.

We noticed that while entrepreneurs face high uncertainty challenges, the countries with transition economy achieved a tremendous growth in their share by Micro-Small-Medium-

sized enterprises (MSME). Therefore in the second chapter we aimed to investigate the effect of an uncertainty on the share of MSME's. Since we presume that uncertainty makes the entrepreneurs to change the entrepreneurial logic to effectual instead of failing the business, we proposed that there is no effect of the level of environmental uncertainty on the share of MSMEs in the countries and the results confirmed our hypotheses. In this study we focused on two main goals:

First, to determine the relationship between environmental uncertainty and the (relative) size of the MSME sector. Second, to study whether there is a difference in this relationship between transition economies and other developed economies. The previous studies that focused on the effect of uncertainty or the effect of the environment attempted to compare all the countries at once without taking into account any specific characteristics of regions, countries or even groups of countries (see for example: Rocha, 2012; West & Drnevich, 2010; Ghosal & Ye, 2015). This has led to ignore the fact that the MSME sector in transition economies is still new and therefore they have less share by MSMEs comparing to the one in developed economies and not necessarily due to the impact of environment. Our study has taken into account which type of economy belongs to each country. Moreover, in this chapter we measured the levels of transition uncertainty, by adapting the measure of uncertainty created by Susjan & Redek (2008). Transition-specific uncertainty stems from three main sources: legacies of the socialist system, political and social instability, institutional and systemic transformation. We have adapted this Uncertainty index taking into consideration specific factors related to Former Soviet transition economies and specifically Central Asian countries. For example, the government intervention and corruption factors in these countries are still very high therefore the weight for these components given in our index is highest due to its impact on everyday activities of entrepreneurs. On the other hand a measurement of the labour regulation is not included since this aspect is under revision by the International Organization (e.g. the issue of the absence of minimum wages in some high performing countries).

Additionally, we thought that it is more correct to utilise a method for analysis which would take into consideration unobserved differences of individual countries and group of countries, since the effect of uncertainty could not be the unique factor that might effect on the MSME

sector size. With the panel data of 53 countries we utilised a Mixed effects regression which was found as a more sophisticated approach that can incorporate individual/group characteristics in a single model, which simultaneously estimates individual/group curves and a sample average curve (Goldstein, 2010) while conventional general regression provides a single equation or growth curve for an entire sample and does not consider differences in change between individuals or groups.

The discussion of an effectual problem space in Uzbekistan and the discovery of insignificant effect of an uncertainty on the growth of MSME's in different countries provided a background for our principal question which was investigated in the third chapter. In this we studied whether entrepreneurs use effectual or causal logics and how this effects on their performance. Several previous studies have already covered the effect of the effectual versus causal logic on business performances. (Mthantia & Urban, 2015; Klessens, 2012; Schlüterl, et al., 2011; Read, et al., 2010; Rust, 2010; DeTienne & Chandler, 2010; Garronne, et al., 2010; Read et al., 2009.)

Instead we identified there was a research gap towards the investigation of the use of effectuation in the export type of internationalisation, in terms of its effects on export performance. We provided detailed review of a prior research that focused on the effectuation vs. causation logics within the internationalisation process of firms in the literature review part of a chapter 3. According to the review of this literature several general assumptions can be made. First of all, all the studies except one, employed case study approach in their paper. Second, all the studies confirmed that effectuation logic is useful in the internationalisation process and that all the companies in the studies relied primarily on their available resources and networks in their internationalisation process. Third, it is possible to perform an unplanned high level of international commitment in an unknown market and unexpectedly accelerate the internationalization process despite limited international experience and lack of an international network (Kalinic, et. al., 2013). A planned approach to internationalisation is not possible for several reasons, namely the lack of firm resources such as capital and human resources as well as the lack of previous international experience, and therefore knowledge and networks for internationalisation (Lazaris, 2014). (For more assumptions please visit chapter 3 of this thesis). The authors could not locate the investigation about the role of

effectuation in export performance and moreover in exporting from the transition economies therefore it was the focus of this study. As well as we studied the effect of perceived environmental uncertainties on the relationship between the effectuation and export performance. Additionally we proposed that the entrepreneurs in Uzbekistan mainly use effectual logic and the level of formal education and previous entrepreneurial experiences do not have importance on the selection of Effectual logic contrary to what has been stated by the owners of the Effectuation theory.

Data analysis was performed using Partial Least Squares (PLS), a structural equation modeling technique that uses a principal-component-based estimation approach (Chin, 1998). We applied partial least squares path modeling (PLS-PM) in R program (Sanchez, 2013) to test the hypotheses. The R program allows the use of moderators and the implementation of both reflective and formative scales (Sanchez, 2013). PLS-PM doesn't impose any distributional assumptions on the data.

While analyzing the data we had to evaluate it by using three PLS-PM different models and select the best suited for this specific case:

Model 1. All the results within an inner model of PLS diagram have been satisfactory and significant. The effect of Effectuation to Export Performance was positive, much higher than effect of Causation and it was statistically significant. While in the outer model (measurement of latent variables), the Effectuation and Perceived Environmental Uncertainties (PEU) variables had negatives signs in some of their indicators. These are usually the result of the pattern of correlations among the formatively measured construct indicators. This fact may question the nature of the formatively measured construct whereas structural predictive capability of the formatively measured construct is not threatened by collinearity (Cenfetelli & Bassellier, 2009). Even so, we wanted to implement some more steps to improve our measurement scale.

Model 2. One of the methods is the model where only one indicator from each dimension of Effectuation and PEU is kept and linked to directly Effectuation and PEU constructs

respectively. In doing so we would avoid the correlations between the formatively measured indicators.

The results of a structural part of a model was very similar to the ones in the model 1 and this proved one more time the notion that PLS structural model estimates hardly alter after performing an elimination of insignificant or highly collinear formative indicators, providing further support for the decision to retain such indicators in the PLS path model (Henseler et al., 2009). In the case of multicollinearity, indicator weight estimates can be distorted. This fact requires being particularly cautious when interpreting indicator weights as a sign of indicator importance (Henseler et al., 2009). According to Jarvis et al. (2003) the researcher should keep both significant and insignificant formative indicators in the measurement model as long as this is conceptually justified. Formative indicators should never be discarded simply on the basis of statistical outcomes. Such actions may substantially change the content of the formative index (Jarvis et al., 2003). Keeping in mind the guidance from other authors we decided not to eliminate the indicators that have a correlation from a model, since there was no substantial change in results. By eliminating these indicators we only distort our latent variable. This means we accepted the first model as a correct one.

However, we decided to continue in reassessing the path analysis by using a different method.

Model 3. PLS Path Models with Higher-Order Constructs. This is an alternative method for PLS path modeling for the type of construct when the indicators of Effectuation variable are aggregated into different dimensions such as Experimentation, Affordable loss, Flexibility, Recommitments, Partnering, Focus on Resources. And the indicators of PEU are also aggregated into several groups.

In this case, the effect of Effectuation was reduced noticeably and it is equal to the effect of Causation. The good news was that the coefficients of the effect of Effectuation, Causation and Uncertainty to the Export Performance are significant based on Bootstrap results with 5000 re-samples. In the first two models the Effectuation as a whole construct has a higher effect on Export Performance while its indicators have insignificant weights. In the third model where each dimension is treated as independent construct that contribute to a bigger

construct, the effect of Effectuation is considerably lower but the indicators of the separate dimensions have improved their weightings due to their reflective treatment. One of the reasons for such results is that our sample size of 103 respondents is too small and homogeneous to be able to properly distinguish between several dimensions of Effectuation construct, but large enough to measure Effectuation as a whole. Therefore assessing the effect of each dimension separately is not very effective. Another reason might be due to some limitations of the only available measurement scale (at the time of writing of this thesis) for the construct Effectuation.

The construct Causation did not have any methodological problems as yet. The reflective measurement for this construct has generated good coefficients. Causation, as stated in the previous chapters of this thesis, demands a good management, marketing, financial management, business planning skills and knowledge as well as the availability of information. It has been discussed several times that in the countries with transition economies there is a lack of all those skills, a solid business education programs, stable business environment and therefore the deficit the needed information. We included several separate control questions in different parts of a questionnaire which would assess whether Causation techniques such as competitive analysis have been implemented in reality.

Based on the answers provided by the entrepreneurs we have a general sense that almost any of the exporters did not use causal techniques, though we should be careful with our general control questions that have not been scrutinized on several research occasions. The provided answers have let us assume that those coefficients for the construct Causation are much lower in reality than they are in our models and therefore we may even ignore the effect of this construct on company's Export Performance.

Summarising the results from our first and a third models there is a positive effect of decisions based on Effectual logic on the Export Performance. There is a positive effect of decisions based on Causal logic on company's export performance. However based on our control questions there are no causal decisions taken in reality. Based on these results and assumptions the effectual decisions lead more to export performance.

In the chapter 3, you will also find the assessment of the effect of entrepreneurial characteristics on the choice of effectual logic and also you will find the analysis related to the effects of a Perceived Environmental Uncertainties as a moderator between Effectuation and Export Performance.

Main contributions of the study in chapter 3 to entrepreneurship field were the findings that:

- Limited effect of entrepreneurial previous experience and expertise in preferring effectuation to causation in Uzbekistan.
- Limited or no use of causation in the country with transition economy.
- There is no role of perceived level of uncertainty in the relationship between Effectuation and Export Performance.
- Even in a highly uncertain business environment of Uzbekistan (as evaluated by international organizations such as World Bank) the entrepreneurial perceptions of uncertainties are from low to medium level.
- Positive effect of effectuation on company's exporting.
- It is the first study of the use of Effectuation in Central Asia, specifically in Uzbekistan.
- It is the first implementation of Partial Least Square Path Modeling method in Effectuation related studies.
- It is the first use of moderated interaction of Perceived Environmental Uncertainty in Effectuation-Export performance relationship.

In overall, in this thesis we focused on three identified gaps in the entrepreneurship literature:

First, there was a need for more studies in entrepreneurship field in Central Asia. The market context of Central Asian transition economy is more dynamic and hostile, as characterized by economic, social, and political instability and uncertainty (Newman, 2000). As a result, the entrepreneurship outcomes are not as certain as suggested in the previous literature on the economic transformation in transition economies' (Zahra, 1993, 522).

Second, there are limited studies that discussed the entrepreneurial logic in the countries with economies in transition.

Third, although research in effectuation comprised the fields such as internationalisation processes of businesses and international entrepreneurship, it still needed to be enriched with studies about exporting in businesses.

This study also demonstrates that although the transition economies are very uncertain and entrepreneurs with their employees are lack of quality business backgrounds, the actions and decisions they take can be backed up by effectuation concept, which in turn provides the connection between the theoretical knowledge and entrepreneurial practice.



Paper 1

1. Effectual Problem Space vs. Transitional Economy

Abstract

This chapter is dedicated to a theoretical discussion of the concept of Uncertainty through the lens of Effectuation theory and Institutional theory. The main objective of this part is to theoretically scrutinise the conditions of an Effectual Problem Space described in Effectuation theory and compare it with a business environment created in transition economies during their institutional transformations. In doing so the focus was given to the transition economies in the Central Asian countries and specifically Uzbekistan's institutional environment was the main concern. The analysis revealed that the highly uncertain environment presented by the terminology Effectual Problems Space (Sarasvathy, 2001) share with the same features of a business environment of a transition economy. Each component of an effectual space was discussed in the current practices of entrepreneurs in Uzbekistan. The discussion of uncertainties, stemmed from institutional settings and government regulations, through the lens of Effectuation theory is the first in the literature and this is our contribution to this field.

We opened a new discussion area within Effectuation theory by proposing that the ideal Effectual Problem Space with high (Knightian) uncertainty, together with goal ambiguity and environmental isotropy is found in the transition markets.

1.1 Discussion of Uncertainties

Uncertainty has been the focus of many scholars in various areas of research. It has been considered as one of the most important factors in strategic management field (Pfeffer & Salancik, 1978; Thompson, 1967; March & Simon, 1958), as a major determinant of a firm's governance mode (Balakrishnan & Wernerfelt, 1986; Rumelt, et al., 1984; Porter, 1980; Williamson, 1975), as an essential component of entrepreneurship (Smith & DiGregorio, 2002; Amabile, 1997; Gartner, 1990; Schumpeter, 1934), as a conceptual cornerstone for most theories of the entrepreneur (McMullen & Shepherd, 2006) and as a particularly relevant concept to transition economies (Susjan & Redek, 2008).

The literature on uncertainty is very rich with its diversified techniques in grouping and categorising this concept. There are several famous classics that have opened the research on uncertainty.

Knight (1933) defines uncertainty as a state that there is 'no valid basis of any kind for classifying instances' to determine a probability from past experience or statistical calculation (p. 225). Knight separates uncertainty from risk in that while risk can be measured by a prior probability or a statistical probability, uncertainty cannot be measured at all. Knight emphasizes the separation of risk and uncertainty because he believes that the separation helps to avoid confusions about the cause of profit. Knight points out a positive aspect of uncertainty considering the uncertainty as the source of opportunity.

J.M. Keynes (1937) insisted on the relevance of true uncertainty for real economic life. He defined uncertainty as a concept referring to matters about which no calculable probability is possible (Keynes, 1937, pp. 213–214). His followers (e.g. Davidson, 1982, 1991; Lavoie, 1992) post-Keynesian economists adopted this concept and treated uncertainty as an aspect of the open future which does not obey the mathematical laws of probability. Past and current events do not provide a statistical guide to knowledge about future outcomes (Arestis, 1992).

Penrose (1959) emphasizes the role of uncertainty with respect to the ability that an entrepreneur takes an action with confidence. Specifically, the role of information is

emphasized in decreasing uncertainty, because entrepreneurs can be confident when they have enough information to estimate the possible course of future events. "Uncertainty resulting from the feeling that one has too little information leads to a lack of confidence in the soundness of the judgment that lie behind any given plan of action" (p. 59). The amount of information will vary across firms because firms are assumed to have heterogeneous resources and capabilities. Therefore, each firm experiences different levels of uncertainty. Firms with lower level of uncertainty will expand more aggressively, because managers of those firms can be more confident in their actions. Penrose argues that each firm face different level of uncertainty because firms have different resources and capabilities.

Thompson (1967) argues that organizations are affected by uncertainty from environmental factors that organizations cannot control. Organizations, then, respond to those factors by actions that decrease uncertainty. By internalizing contingencies into closed-system, an organization can pursue rational decision-makings without uncertainty. In fact, while organizations in closed-system can seek goal achievement through internal control, organizations in open-system must shift their attention from goal achievement to survival because they cannot control external factors. Therefore, organizations in open-system should cope with both internal control issues and external uncertainty problems. One way to solve this problem is vertical integration. Vertical integration allows organizations to control unexpected events in advance and to seek goal achievement in closed-system.

These studies have defined the concept of uncertainty and they treat it at a conceptual level. They do not seek to operationalize uncertainty. A number of studies further developed this concept by focusing on more practical implementation and measurement of uncertainty.

One of these concepts is a perceptual view of uncertainty. Perceptual views of uncertainty emphasize individual differences in ways to perceive uncertainty. It is believed that the perception mediates between the environment to make a meaning of it and the taking necessary action. (Jauch & Kraft, 1986; Terborg, 1981; Lorsch & Allen, 1973; Lawrence and Lorsch, 1967; Burns & Stalker, 1961).

Duncan's (1972) work is one example of perceptual view. He identifies three components of uncertainty - the lack of information regarding the environmental factors, the lack of knowledge about the organizational consequences of a specific decision, and the lack of ability to assign probabilities as to the effects of a given environmental factor on organizational success or failure.

Similarly, Milliken (1987) suggests three types of uncertainty. The state uncertainty which refers to the lack of knowledge about the state of nature; the effect uncertainty is defined as an inability to predict what the nature of the impact of a future state will be to the organization; and response uncertainty is a lack of knowledge of response options and/or an inability to predict the likely consequences of a response choice (Conrath, 1967; Duncan, 1972; Taylor, 1984). Perceptual views of uncertainty have developed variety of dimensions of uncertainty.

Miles & Snow (1978) and Sutcliffe & Zaheer (1998) argue that uncertainty should be studied based on the different components of the environment, and not the environment as a whole, to interpret its real contribution to decision making. Miles & Snow (1978) posited that defining uncertainty broadly as 'environmental uncertainty' is not sufficient; it is important to identify and measure the various components of the firm's environment that acts as source of uncertainty for the firm. They identified several environmental components that serve as sources for uncertainties: customer, competitor, supplier, market, technology, government, and resource. Changes in each of these components differentially affect the operational and strategic decisions of a firm (Song & Weiss, 2001; Matthews & Scott, 1995).

Similarly Starbuck (1976) emphasized, uncertainties are firm specific, they may be perceived uniquely by the top management of an organization, and they may take different strategic actions to cope with them.

Researchers in perceptual view domain have tried to identify and quantify various environmental factors that contribute to uncertainty (e.g., Matanda & Freeman, 2009; Meijer, M. et al., 2006; Hoque, 2004; Miller & Kent D, 1993; Kent D, & Miller, 1992; Milliken, 1987; Govindarajan, 1984; Tosi & Slocum, 1884; Porter, 1980; Jauch et al., 1980; Miles & Snow, 1978; Khandwalla, 1977; Duncan, 1972; Lawrence & Lorsch, 1967). A detailed

discussion of these dimensions for perceived environmental uncertainties is included in the third chapter.

Moreover some scholars classified the sources of uncertainties based on their intensity level. For example, Jaworski & Kohli (1993) measure the environmental uncertainty in terms of market turbulence and competitive intensity. As market turbulence they refer to the environment where business customers' preferences change quickly and the customers are highly price sensitive. Whereas by competitive intensity the authors referred to the market where the competition is high and increasing. Ganesan (1994) proposed market volatility dimension, by which he points change intensity in supplier market and product market. Johnson and Scholes (1999) viewed the extent of environmental uncertainty in terms of increase in environmental dynamism and complexity. The pace of change in environmental variables determines the level of environmental dynamism. Dynamism measurement scales were developed in the works of Castrogiovanni (2002), Sharfman & Dean (1991), Keats & Hitt (1988), Dess & Beard (1984).

Due to different assumptions about the nature of uncertainty, different dimensions of uncertainty can be found in various theories. Theories that involved major discussions of environmental uncertainty are Transaction Cost Theory (Sutcliffe and Zaheer, 1998; Heide and John 1990; Klein 1989; Harrigan, 1986; Anderson 1985; Anderson and Schmittlein, 1984; Walker and Weber, 1984; Williamson, 1975; Simon, 1961); Resource-based Theory (Mahoney and Pandian, 1992; Barney, 1991; Penrose, 1959), Contingency theory (Starbuck, 1976; Aldag & Storey, 1975; Thompson, 1967; Lawrance & Lorsch, 1967; March & Simon, 1958), Perceptual theory (Starbuck, 1976; Downey & Slocum, 1975; Duncan, 1972; Child, 1972); Real options theory (Kogut and Kulatilaka, 1994; Kogut, 1991), Theory of entrepreneur (Kirzner, 1973; Schumpeter, 1934; Knight, 1921), Keynesian and post Keynesian theories (Dow and Hillard 1995; Dow 1991; Keynes, 1964); Institutional theory (Minsky, H., 1996; DiMaggio & Powell, 1991; Meyer & Rowan 1977; Simon, 1947). In this review of the literature we discuss the uncertainties through the lens of Institutional theory, while considering the origins of uncertainties in the transition economies that shape business environments.

1.2 Uncertainties in transition economies

The business environment in transition economies is dominated by high levels of true uncertainty due to the nature of transformation process which involves social, political and economic transformation. This process involves a shift from public to private sector ownership, the liberalization of markets, where central administration of prices is replaced by market mechanisms, the creation of market institutions, such as banks, other financial intermediaries and business and training support services. Moreover the transformation is not only an economic process but also a fundamental social change (Smallbone & Welter, 2001, a.).

Aidis (2004) provided general characteristics of the entrepreneurial environment in transition countries (Table 1).

Table 1: Entrepreneurship in transition countries: General characteristics (Source: Adapted from Aidis, 2004)

Factor	General characteristics
Environment	Macro: Dramatic changes to socio- economic and political conditions
	Micro: The reorganization of work
	Lack of recent 'productive' entrepreneurial tradition
	Hostile economic environment
	Initial explosion of business activity followed by declining SME start up rates
	Absence of business infrastructure and support services
	Lack of external financing
The role of the state	Neo-liberal governmental stance; hesitant to intervene in market processes
	No previous experience with business tax system or legislation
	Negative attitude towards entrepreneurs
	Over-regulation, interference, corruption
Business owner characteristics	New Business, new career
	Illegal entrepreneurship experience
	Diverse social origins
	Primitive business methods
	Dependence on assistance through private networks
	Government skepticism
	Passive, bureaucratic attitude
	No previous experience with business tax system or legislation
	More progressive and market-oriented than the general population

Most transition countries lack a recent 'productive' entrepreneurial tradition (Smallbone & Piasecki 1995). The lack of private enterprise tradition in most transition countries resulted in an absence of business infrastructure (Smallbone & Piasecki 1995). Moreover the initial growth of private business activity coupled with the implementation of neo-liberal transition programs resulted in a lack of private business support services (ibid.). A 'hostile economic environment' (high inflation rates, persistently high unemployment rates, declining real earnings, etc.) again in various degrees, has characterized the transition process (Smallbone & Piasecki 1995; Smallbone & Welter 2001, a.).

The lack of developed business infrastructure and support services leads many business owners to depend on business assistance (financial, advice, etc.) through private networks. Most business owners also exhibit scepticism towards the national government in terms of their ability and/or willingness to support (or simply not interfere with) private business development (Smallbone & Piasecki 1995). Though business owners are often critical of the government, they tend to adopt a passive rather than pro-active attitude. In addition, new business legislation and taxes create difficulties for business owners in transition countries who generally lack experience with income and profit tax or private business legislation (Roberts & Zhou 2000).

The most important state-related barriers seem to be related to either a high level of taxes, the frequent changes to tax policies, the ambiguity of tax policies (Aidis 2004; Radaev, 2003; EBRD 2002; Hashi 2001; Bartlett and Bukvic 2001; Bohata and Mladek 1999; World Bank 1995) and/or the general regulatory environment (Kaganova, 2002; Hashi, 2001; Glas et al. 2000; World Bank 1995). Informal barriers such as the implementation of regulations (Bartlett & Bukvic 2001) especially property rights (Radaev, 2003), bureaucracy (Radaev, 2003) corruption (Bohata & Mladek 1999) and unfair competition from a large informal economy (Glas et al., 2000; Muent et al., 2001) are also often mentioned as barriers to private business development.

A number of studies have indicated that the lack of finance is a barrier for businesses in the transition context (Pissarides 2004; Aidis 2003; EBRD 2002; Kaganova 2002; Bartlett and Bukvic 2001; Bartlett 2001; Hashi 2001; Glas et al. 2000; Slonimski 1999; Pissarides et al.

1999; World Bank 1995; Roman 1991). Additional environmental barriers that interfere with day-to-day business operations include low purchasing power (Aidis, 2004), lack of qualified workers (Bohata & Mladek 1999), access to equipment and premises (Radaev, 2003) and late payment by clients (Bartlett & Bukvic 2001). Finally skill-based barriers such as the lack of business-related skill development stem from the absence of previous private business experience in transition countries (Roberts & Tholen 1998). In many cases, private business owners may not be aware of their skill shortcomings though it can impede with the survival and growth of private businesses in transition countries (Aidis, 2004).

The discussion demonstrates that the source of the environmental uncertainty in the countries with transitional economies is the institutional infrastructure or the weaknesses of the created new institutional bodies. The institutional environment as a source for uncertainties is better viewed through institutional theory.

1.3 Uncertainties through Institutional Theory

Institutional Theory emphasizes the formal and legal aspects of government structures. (Kraft, 2007). Institutions have been devised by human beings to create order and reduce uncertainty (North, 1990).

If institutions are the rules of the game, organizations are the players. They are groups of individuals engaged in purposive activity. The constraints imposed by the institutional framework (together with the other constraints) define the opportunity set and therefore the kind of organizations that will come into existence.

For instance, multinational corporations operating in different countries with varying institutional environments will face diverse pressures. Some of those pressures in host and home institutional environments are studied to find fundamental influences on competitive strategy (Martinsons, 1993; Porter, 1990) and human resource management practices (Zaheer, 1995; Rosenzweig & Singh, 1991).

There is substantial evidence that firms in different types of economies react differently to similar challenges (Knetter, 1989). Social, economic, and political factors constitute an institutional structure of a particular environment which provides firms with advantages for engaging in specific types of activities there. Businesses tend to perform more efficiently if they receive the institutional support.

If the highest rates of return in a society are to be made from piracy, then organizations will invest in knowledge and skills that will make them better pirates; if organizations realize the highest payoffs by increasing productivity then they will invest in skills and knowledge to achieve that objective. Organizations may not only directly invest in acquiring skills and knowledge but indirectly (via the political process) induce public investment in those kinds of knowledge that they believe will enhance their survival prospects (North, 1990).

In organizational studies, the research tended to emphasize the capacity of institutions to control and constrain organizational behaviour through external environmental factors (c.f. Scott, 2014; Thornton, Ocasio, & Lounsbury, 2012; Greenwood, et al., 2008). This included empirical work focused on how cultural expectations, legitimacy, and isomorphic processes exerted pressures on the organization to conform to “legitimate practice” in a given institutional field (e.g. Davis, 1991; Galaskiewicz & Wasserman, 1989; Fligstein, 1985).

Roland (2004) in attempting to understand institutional change, classified the institutions based on the capacity of institutions to change rapidly or slowly, and whether or not that change is continuous. Political institutions, for example, he attributes to fast-moving institutions, which change nearly overnight when there are revolutionary moments. In contrast, social norms, he considered, are more often an example of slow-moving institutions. According to him, the legal systems tend to be faster-moving institutions than social norms but slower-moving than political institutions. The effectiveness of the legal system and the enforcement of laws depend on their acceptance and legitimacy in society and on the expectations of many actors.

Roland (2004) also explained which institutions tend to change continuously and which discontinuously. Compared to social norms, political institutions may change more

discontinuously; they may change little for prolonged periods of time, then change very abruptly. Social norms (culture), on the other hand, tend to change continuously, albeit slowly. Legal arrangements are again somewhat in between. This is in confirmation of ideas of North (1990) about that the changes in informal norms, conventions, or personal standards of honesty occur gradually and sometimes quite subconsciously as individuals evolve alternative patterns of behaviour consistent with their newly perceived evaluation of costs and benefits.

Moreover Roland (2004) considers that the culture and technology have many things in common. Both tend to evolve continuously and slowly, both involve research and experimentation, trial and error, and learning. Education is the acquisition of both technology and culture. The evolution of technology and culture are difficult to predict because they obey the laws of the evolution of knowledge. These commonalities between culture and technology also mean that they evolve in parallel. Sets of beliefs related to technology influence sets of beliefs related to interactions among humans.

Roland (2004) proposes to view institutional change as the interaction between slow-moving institutions, culture in particular, and fast-moving institutions such as political and legal institutions. The interaction between slow-moving and fast-moving institutions provides an explanation for why the transplantation of 'best-practice' does not work. It provides content to the idea that different countries have different 'local conditions', which arise from each country's slow-moving institutions. It also provides a rationale for why reforms in a given country must build on these local conditions. In other words, countries with different cultural and historical paths must find within their existing slow-moving institutions the roots for changes in their fast-moving institutions.

North (1990) explains institutional (and organizational) change as endogenous, an essential step to further progress in economic history and economic development. He puts forward the main elements of the institutional change: Agents, Sources, Process and Direction. According to him, the agent of change is the entrepreneur, the decision maker(s) in organizations. The subjective perceptions (mental models) of entrepreneurs determine the choices they make.

The importance of individual mind is also stressed by DiMaggio et al. (1991). They define an emerging perspective the 'new institutionalism' as rejecting the rational-actor models of Classical economics. This theory seeks cognitive and cultural explanations of social and organizational phenomena by considering the properties of individual units of analysis that cannot be reduced to aggregations or direct consequences of individuals' attributes or motives.

The importance of the cognitive abilities of individuals in response to environmental changes was the focus of acknowledged. Simon (1996). His 'Bounded rationality' conception has an important implication in the discussion of organisational response to institutional changes. Bounded rationality is a school of thought about decision making that developed from dissatisfaction with the "comprehensively rational" economic and decision theory models of choice. Bounded rationality assumes that actors are goal-oriented, but there are cognitive limitations of decision makers in attempting to achieve those goals. Rather than making assumptions about decision making and modelling the implications mathematically for aggregate behaviour (as in markets or legislatures), bounded rationality adopts an explicitly behavioural stance. The behaviour of decision makers must be examined, whether in the laboratory or in the field (Jones, 1999).

Simon (1996) showed how the model did not comport with how people really made decisions. He developed "procedural model of rationality", based on the psychological process of reasoning of how people conduct incomplete searches and make trade-offs between values (Jones, 1999).

Relating to the discussion of institutional changes, the sources of change are the opportunities perceived by entrepreneurs. They stem from either external changes in the environment or the acquisition of learning and skills and their incorporation in the mental constructs. For instance, the changes in relative prices have been the most commonly observed external sources of institutional change in history, but changes in taste have also been important. The acquisition of learning and skills will lead to the construction of new mental models by entrepreneurs to decipher the environment; in turn the models will alter perceived relative

prices of potential choices. In fact it is usually some mixture of external change and internal learning that triggers the choices that lead to institutional change (North, 1990).

Deliberate institutional change will come about therefore as a result of the demands of entrepreneurs in the context of the perceived costs of altering the institutional framework at various margins. The entrepreneur will assess the gains to be derived from re-contracting within the existing institutional framework compared to the gains from devoting resources to altering that framework. Thus entrepreneurs who perceive themselves and their organizations as relative (or absolute) losers in economic exchange as a consequence of the existing structure of relative prices can turn to the political process to right their perceived wrongs by altering that relative price structure. Douglas North (1990) – “In any case it is the perceptions of the entrepreneur, correct or incorrect that are the sources of action”. The entrepreneurial responses to institutional environment in the role of main actors in institutional change process in transition economies are discussed in the next chapter.

An interesting part of this review is about the role of uncertainties. While North (1990) argues that institutions have been devised by human beings to create order and reduce uncertainty and that they need to be in constant elaboration, the institutional development process itself creates uncertainties for future decisions. The larger the number of rule changes, the greater the number of losers and hence opposition. This in turn generated a new term “Institutional uncertainty”.

Institutional uncertainty is a broad concept, encompassing very different forms of uncertainties within the political environment. Brunetti & Weder (1998) divide them into four categories that measure different aspects of the (un)certainty of the institutional framework.

Government instability indicators concentrate on the history of government changes or on the likelihood of a government’s staying in power. This assumes that every significant change of executive power is likely to be accompanied by policy changes that introduce an element of uncertainty into the institutional framework. The more unstable the government, the higher is institutional uncertainty.

Political violence indicators measure all forms of violent events associated with the political process. The more common violence is in the political process, the less secure are people and property. Because this instability spawns uncertainty, it reduces investment according to the theoretical considerations.

Policy uncertainty indicators concentrate on uncertainties created by changes in policies rather than in politics. Policy uncertainty can be expressed either through the volatility of the institutional framework (for example, the number of changes in the constitution) or through the volatility of outcomes (for example, the volatility of the inflation rate).

Enforcement uncertainty indicators focus on the relation between private sector and the state, namely the degree of confidence private firms can have that their property and contract rights will be unarbitrarily enforced. These measures concentrate on the discretionary behaviour of the judiciary as well as the bureaucracy.

1.4 Institutions in transition economies.

Many authors agree that transition is largely a process of institutional change (Eicher – Schreiber 2010; North 2005; Redek – Susjan 2005; Cornia – Popov 2001). The fundamental role of institutions in the economic transition process has been focus for many social scientists. (see for example, Havrylyshyn & Van Rooden, 1999; Stone, Leve & Paredes, 1996). Accordingly, institutional economics may be particularly relevant in explaining economic differences among transition countries.

Transition in the successive states of the former Soviet Bloc countries is a process that has been implemented in the last 25 years. The corresponding process in Latin America has about 30 years of record. By comparison, the economic transition in China has been a gradual state-led process that started back in 1979 and has had more than 35 years of history. Transition reforms varied in characteristics, goals, scope and scale of development and implementation. Regardless of the specifics of the process, the transition has resulted in changes of the nature of business and its specifics in each particular country. By mid- 1990, about 35 per cent of

the output of the former Soviet Bloc countries was created by the private sector of the respective national economies, market supply had increased and business environments across the region were in the process of continuous transformation. (Marinov & Marinova, 2011)

All the transition economies are characterised by continuous institutional change going in the same direction - the move from government's central planning and allocation resources towards decentralised market allocation which necessitates substantial changes in laws and regulations, in social and individual minds. Marquis & Raynard (2014) broadly defined transition economies as countries undergoing fast-paced turbulent change as a result of economic liberalization, rapid industrialization, and increased integration into the global economy.

There are differences between traditional developing countries in Asia, Latin America, Africa, and the Middle East *and* transition economies in the former Soviet Union, Eastern Europe and East Asia (Khanna & Palepu, 2010; Wright et al., 2005; Hoskisson et al., 2000). However, there are several common factors in both emerging and transition countries critical factor. One is the strong influence of the government and the prevalence of state-owned firms (Douma, et al., 2014; Terpstra-Tong, et al., 2006; George, & Kabir, 2006; Evans, 1995;). It is important for businesses to consider the frequency and level of government interventions, as well as the overall stability of the political environment in their operational decisions.

In transition and emerging economies there is a greater informality and less developed government and regulatory infrastructures. Both regulatory and enforcement environments are only marginally developed, such that market regulation, corporate governance, transparency, accounting standards, and intellectual property protection may not be as reliable or mature as those in more advanced economies (Marquis & Qian, 2014, Marquis, et al., 2011). Under these conditions, corruption and opportunistic behaviour is especially problematic. Thus international firms that are doing business in these markets frequently turn to detailed contracts to govern their joint ventures (Luo, 2002). These economies tend to be characterized by a younger population, an expanding workforce, and rapid urbanization. These factors have important implications for day-to-day business operations, including marketing and

promotion strategies, staffing and training, and consumer preferences. (Marquis & Raynard, 2014).

Transition economies typically have less developed or inadequate technological and physical infrastructures as compared to developed economies. For example, inadequate communication technology, commercial and transportation infrastructures, power generation capabilities, and distribution channels are critical challenges that businesses need to consider and overcome (Hitt, et al., 2000; Miller, 1998).

These complexities in the institutional environment created a number of institutional obstacles to entrepreneurship. Institutional obstacles to entrepreneurial activity were first highlighted by Baumol (1990) and have been explored in recent years by a number of economists including Sobel (2008); Djankov, et. al., (2004); McMillan & Woodruff (2002, 1999), De Soto (2000), and Baumol (1990) emphasises the critical role of institutions in directing entrepreneurship, either to productive or to non-productive or even destructive activity.

Entrepreneurship levels were in fact lower in the transition economies as a group than in the other developed and developing economies of the GEM sample confirmed by several researchers. (Aidis, et. al., 2008; Estrin, et. al., 2006; Aidis & Mickiewicz, 2006; McMillan & Woodruff, 2002). The weakness of institutions such as property rights enforcement lead to low level of entrepreneurial activity (Estrin & Mickiewicz, 2010), especially it is confirmed in low income and middle income economies (Aidis et al., 2009) and discourage entrepreneurs to reinvest their retained profits into business. (Johnson, et.al., 2002).

The EBRD transition indicators (EBRD Transition Report, 1994- 2009) show that implementing many aspects of the reform of formal institutions can be brisk, though arriving at a well-functioning set of new institutions takes much longer, largely because informal institutions are more difficult to change than formal ones (North, 1990). Thus the rapid pace of formal institutional change in transition economies during the 1990s was not matched by changes in informal institutions (Meier & Stiglitz, 2001). The legacy of communism was not conducive to entrepreneurial activity (Estrin et al., 2006), as reflected by the social attitudes shaped during the communist period (Schwartz & Bardi, 1997).

Aidis *et al.* (2008) posit that the level of generalised trust is low in transition economies therefore entrepreneurial entry is less common and new ventures are started by those who have already established themselves in business. Furthermore entrepreneurs require financial resources in order to establish and run their new firms and they must either provide this from their own saving, or borrow it from financial markets (OECD 2006; Beck, *et. al.*, 2008; 2006; 2005; Storey 1994; Stanworth & Gray 1991). Neither of these sources was widely available in the transition economies initially.

The transition economies score poorly on both dimensions of the supply of finance, in contrast to some of the developed countries, where formal credit abounds (United States, Japan, United Kingdom) and to some of the developing countries where informal finance is extensive (Uganda, Jordan, Peru, Ecuador, Mexico. China scores much higher both on formal and informal credit dimension and in line with smaller neighbouring Asian economies of Thailand, South Korea and Taiwan. (Smallbone & Jianzhong, 2009). As weak formal institutions in the transition countries may be partly substituted by strong private networks and informal finance as, for example in Latin America. However, this does not seem to be occurring in transition economies and a limiting factor here is the lack of personal wealth. Aidis *et al.* (2008).

Several other institutional characteristics also affect entrepreneurial endeavour: the quality of commercial code, the strength of legal enforcement, administrative barriers to entry and to business activities, the prevalence of extra-legal payments and a lack of market-supporting institutions.(Baumol ,1990; McMillan & Woodruff , 2002; 1999), De Soto, 2000; Djankov, *et. al.*, 2004; Sobel, 2008). The costs created by an inefficient, inconsistent and/or corrupt system of tax collection may substantially add to the costs of running an entrepreneurial business. Aidis & Mickiewicz (2006) found that perception of high taxes ranks highest amongst the obstacles identified by small firms in Lithuania.

Schwartz & Bardi (1997) identify cultural variation across different post-communist societies. The transition countries that went through the full cycle of communism from the end of World War I until late 20th century, including the damaging Stalinist period (Applebaum, 2003) also score lower in terms of values conducive to entrepreneurship, as compared with

those countries where Communism was introduced after the end of World War II. Similarly to Sztompka, 1996; Schwartz & Bardi (1997) show that the differences between transition and comparator countries are lower for younger people, both because of the generational effect and the greater capacity of young people to learn and adopt to new conditions and cultural influences.

The corruption dimension is located at the intersection of formal and informal institutions, and is likely to have a significant impact on entrepreneurship (McMillan & Woodruff, 2002). Aidis & Mickiewicz (2006) argue that corruption is damaging to entrepreneurial activity and expansion as it increases the level of uncertainty and reduces entrepreneurial gains. Corruption is a key outcome variable reflecting all institutional weaknesses in the economy, and it results from weak property rights, arbitrariness in state administration, weak judicial system, excessive and non-transparent regulatory frameworks but also prevailing social norms and behavioural expectations (Aidt, 2009; Treisman, 2007; Tanzi, 1998).

The successful entrepreneurs can develop strategies that minimize the detrimental effects of negative informal institutional influences, through networking (Minniti & Levesque, 2008), but these adaptations come at a high cost (Aidis et al., 2008). Therefore it is observed by Estrin et al., (2006) very low levels of entrepreneurship combined with greater reliance on informal networks and endemic corruption in Russia. In contrast, the levels of entrepreneurship are higher in CEE and reliance on informal networks is less; moreover, though corruption still affects a significant percentage of enterprises in these countries the levels are less than in the Former Soviet Union (FSU) block (Transition Report, 2009; Aidis & Mickiewicz, 2006; Aidis et al, 2008).

Existing research suggests that post-communist societies, and especially members from the older generation, are characterised by a different set of values from that typically pertaining in developed market economies. In particular, autonomy and mastery score lower, and generalised trust is missing; moreover, the difference is more marked in the FSU than CEE. These values affect entrepreneurship directly and may also affect it indirectly via their impact on the way formal institutions function. In particular, lack of trust affects expectations and

may result in a self-fulfilling vicious circle of poor institutional practices and corruption (Estrin & Mickiewicz, 2010).

Aidis et al. (2010) concluded in their findings that (a) institutional obstacles to entrepreneurship have different impact in rich countries compared to poor countries; (b) institutional obstacles have a stronger impact on 'opportunity entrepreneurship' than on 'necessity entrepreneurship'. These findings are confirmed by Sarasvathy (2004, p. 209), that the significance of institutions on the level of entrepreneurial activity will be greater for opportunity than necessity entrepreneurship. She notes, that most individuals would become entrepreneurs due to suitable conditions; a combination of opportunity and a conducive environment. Therefore it would be expected that individuals who are reacting to entrepreneurial opportunities in the environment to be more sensitive to the overall institutional environment, than individuals who become entrepreneurs purely out of necessity. Moreover in the same research Aidis et al. (2010) confirmed that (c) two institutional indicators - property right protection and access to finance - appear to have a dominant impact on entrepreneurship; and that (d) institutions have a long term impact.

1.5 The Style of the economic transition

The economic transition process in Central Asian countries seems to the process of effectuation, as all the countries started with what they were left in hands after the collapse of the Soviet Union and what knowledge and experiences they had, and whom they knew for the partnerships. This is consistent with what says Sarasvathy; entrepreneurs begin with three categories of "means": they know who they are, what they know, and whom they know—their own traits, tastes, and abilities; the knowledge corridors they are in; and the social networks they are a part of. At the level of the firm, the corresponding means are its physical resources, human resources, and organizational resources. At the level of the economy, these means become demographics, current technology regimes, and sociopolitical institutions such as property rights. (Sarasvathy, 2001a). All the Central Asian countries had to heavily rely on what they had in their initial stages of the transition, their major natural resources, human capital and a destroyed institutional environment.

In contrary, the institutional management of the Eastern European countries was mainly done by using plans which included criteria for conditions to entry to European Union (EU) that can be called a causal approach to the management of the country. The causal approach is possible when there is a low level of uncertainty and availability of funds to accomplish the set objectives, as in the case of EEC, where they had access to EU funds (initially pre-Accession funding and latterly Structural Funds). This has encouraged new member states to adjust their institutional structures and processes to increase their chances of securing this funding, some of which were used to promote and support entrepreneurship at the national and regional levels. Apart from a clearer separation of policy making from policy implementation, with potential benefits in term of greater transparency and accountability, the EU influence has also extended to the policy process itself. This includes requiring explicit links between strategic policy objectives and action plans, which are tied into the budgetary process. (Smallbone & Welter, 2010). This has helped to reduce the so-called 'implementation gap', which has previously been identified as a common feature of government policy in transition countries (Smallbone & Welter, 2001b).

Accession to the EU contributed to a more active stance on the part of government in some countries in the late 1990s. For example, in Poland, this was reflected in the publication of strategic policy documents in 1995, 1999 and 2003. In Estonia, by explicit enterprise policy documents published in 2002 and 2006 (Smallbone & Welter, 2009a) is one of the more explicit influences of EU membership on institutional change in a number of the new member states. (Smallbone & Welter, 2010)

However, the states of the former Soviet Union did not have this privilege after the collapse of the union. Most of the formerly Soviet states made efforts to rebuild and restructure their economic systems, with varying results. The process triggered a severe transition decline, with Gross Domestic Product (GDP) dropping by more than 40% between 1990 and 1995 (The World Bank, 2002). This decline in GDP was much more intense than the 27% decline that the United States suffered in the wake of the Great Depression between 1930 and 1934 (Kalikova & Associates Law Firm, Kyrgyzstan, 2009). The reconfiguration of public finance

in compliance with the principles of market economy resulted in dramatically reduced spending on health, education and other social programs, leading to a sharp increase in poverty. The economic shocks associated with wholesale privatization resulted in the deaths of roughly 1 million working age individuals throughout the former Soviet bloc in the 1990s (Privatisation 'raised death rate'. *BBC*, 15 January, 2009).

The Eastern European countries as a group outperformed the CIS countries, but whether that reflected superior policies or better initial conditions is difficult to identify. (Pomfret, 2010)

The Central Asian countries, as well, suffered serious disruption from the dissolution of the USSR. Demand and supply networks based on under-valued transport inputs quickly collapsed in the early 1990s. The shift to world prices notionally benefited the energy exporters, Kazakhstan and Turkmenistan (Tarr, 1994), but in the 1990s their ability to realize these gains was limited by dependence on Russian pipelines. Falling output and rising prices became much worse after the formal dissolution of the USSR. Attempts to maintain economic links by retaining the ruble as a common currency in 1992-93 exacerbated the problem of hyperinflation and were abandoned by the end of 1993. (Pomfret, 2010)

1.6 Effectuation and Effectual Problem Space

In her article, Sarasvathy (2001) proposes a new Theory of Effectuation, where she confirms that the entrepreneurial mind uses two different types of modes – effectuation and causation. According to her the effectual approach changes the logic from one of prediction to one of control. The Effectuation is stated more used by expert entrepreneurs who have experience in business, whereas causation is mainly used by novice entrepreneurs, or managers of big organisations mainly with business education background. (Dew et al., 2009).

Causation approaches a problem with the end in mind, with a specific goal formulated and then related resources and capabilities are gathered to achieve that goal. The causal logic predicts the best case scenario.

This is contrasted by effectual logic that attempts to “control” the future instead of “predict”, by making use of the resources in hand while trying to achieve the best results. Effectuation theory states that entrepreneur evaluates the alternatives, in particular the choice of strategic partners, in regard to their potential for future success. The goals are adapted to the choices and in particular the needs of the strategic partners. (Schluter et al., 2011).

In a causal decisional process, it is necessary to process a significant amount of information in order to plan the future or to develop possible scenarios; whereas, effectuation logic has as a starting point in the analysis from the resources on own disposal. The person keeps up with the collection of information or even precedes it. The objective is continuously modified in accordance with the information collected and the people met by, thus expanding the resources at disposal and creating a new unforeseen artifact. (Sarasvathy, 2001).

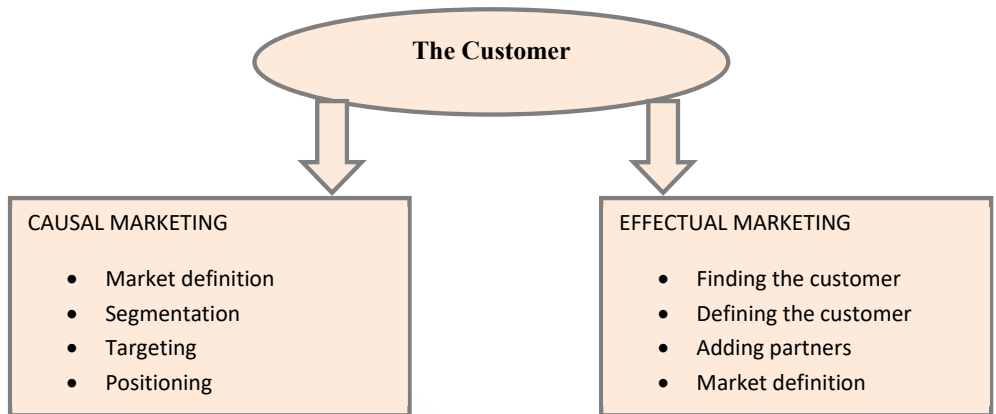
Table 2: Effectual vs. Causal Logic. Adapted from Sarasvathy (2001)

Effectuation	Causation
Means are given (Who I am, What I know, Whom I know)	Given goals and targets
Affordable loss	Predicted projects returns
Existing uncertainty reduced through partnerships and pre-commitments of stakeholders	Uncertainty is reduced by competitor analyses and market research
Contingencies/surprises seen as source of opportunities	Any surprises are avoided and concentrated on the main project goals
Human agency seen as prime driver of future developments	Development/trends seen as exogenously given that can be exploited by use of forecasts

Source: https://www.uni-oldenburg.de/fileadmin/user_upload/wire/fachgebiete/entrepreneur/download/Literatur/Sarasvathy.pdf, retrieved on 28.11.2016

Sarasvathy called a causal view Kotler’s (1991) segmentation- targeting-positioning in devising marketing strategies to identify the potential market. She proposes an alternative, effectual view, and defined it as “the process by which the entrepreneur in a prefirm identifies, defines and often creates a new market for the idea, and also creates a resource base through developing stakeholder network. (Sarasvathy, 2001). See figure 1.

Figure1: Contrasting the processes of causation and effectuation (Adapted from Sarasvathy, 2007; 30)



Source: http://www.effectuation.org/sites/default/files/research_papers/what-makes-entrepreneurs-entrepreneurial-sarasvathy_0.pdf, retrieved on 28.11.2016

Effectuation theory (Sarasvathy, 2001) focuses on the decision-making in conditions of high uncertainty when the future cannot be predicted through statistical inferences. In such conditions, based on the means available, entrepreneurs, managers, politicians may develop opportunities based on the affordable loss principle rather than on the maximization of expected returns. They create effective new ventures, economies not based on a strictly planned strategy but as an outcome of interaction with their social, political network. (Kalinic et al., 2014).

The author of the theory emphasizes that effectuation processes are not posited as "better" or "more efficient" than causation processes in creating firms, markets, and economies. Fifteen years of empirical studies since the first proposition of effectuation theory asked which types of processes provide particular advantages and disadvantages for causation and effectuation logics.

Moreover Sarasvathy (2003), in Effectuation theory, proposes a special term "effectual problem space" to describe uncertain business environments. She states that high Knightian uncertainty, together with goal ambiguity and environmental isotropy, constitutes the

effectual problem space (Sarasvathy et al., 2008). In her explanations goal ambiguity indicates that there is only a general goal; but the performances are not given, not well-ordered nor translated in specific sub-objectives/action plans. It is more likely that the decision maker (i.e. entrepreneur) has a vague, general, final ambition (vision) that can be refined and even completely changed through the interaction with other people and the environment. Isotropy indicates that it is not clear which pieces of the environment can be useful. According to her in this kind of environment the process of collecting information is difficult and cannot be set up in a traditional manner as it would be difficult to know which information to pay attention to and which to ignore.

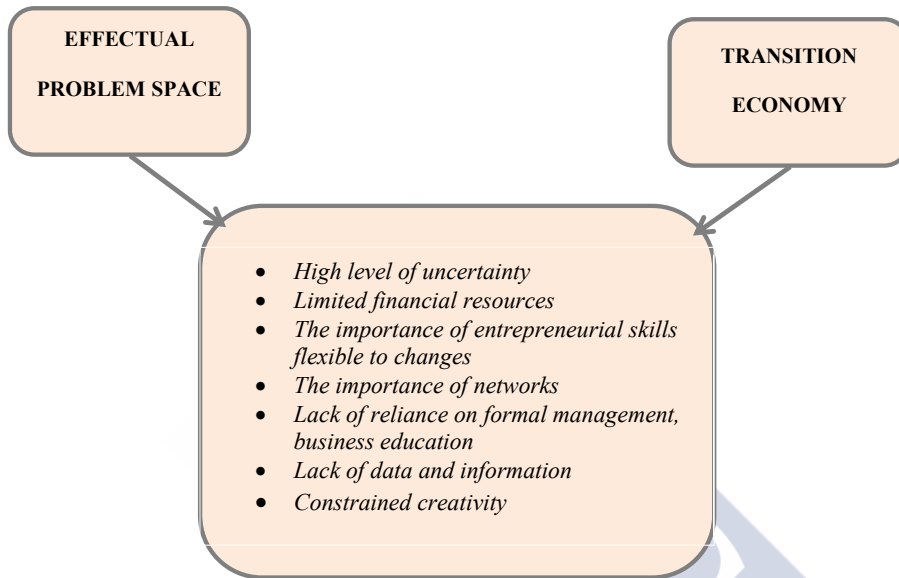
According to Sarasvathy the effectual problem space forces to make effectual decisions in order to achieve better performance when there is a high level of uncertainty. By reviewing the literature in the field of entrepreneurship, businesses in transition economies, transition economies, institutional economy, effectuation, small and medium sized enterprises, internationalisation of small businesses it can be assumed that entrepreneurs of small and medium sized enterprises, and especially those that are performing in highly uncertain environments seem to rely mostly on effectual decisions. (see for example Thai and Chong 2013; Smallbone and Welter 2010; Mainela & Puhakka 2009; Yang 2007; Ledeneva 2006; Crick and Spence 2005; Manolova and Yan 2002; Cyert and March 1963 etc.). Moreover, the review and analysis of the condition named as “effectual problem space” by Sarasvathy (2003) revealed that it shares with similar characteristics with circumstances in transition economies. Building on Effectuation theory, below we are going to bring together descriptions given to effectual problem space and compare them with conditions of economies in transition described in previous studies. While doing so we want to discuss about effectual problem space settings in CIS countries with the aim to make proposition that the entrepreneurs in transition economies mainly use effectual logic in order to perform well.

1.7 Effectual Problem Space using examples from transition economies

There are several characteristics of Effectual problem space. Its components are similar to the

conditions of a transition economy. (See the Figure 2). Below each component is compared with relevant condition of transition economies described in various studies.

Figure 2: Characteristics of Effectual Problem Space and Transition Economy



High level of Uncertainty

One of the features of effectual problem space is environmental uncertainty. Stated in Sarasvathy et al. (2008) high uncertainty, together with goal ambiguity and environmental isotropy, constitutes the effectual problem space. While, effectual type decisions allow for greater organizational resilience against environmental shocks and pressures and are recommended for entrepreneurial settings of heightened uncertainty. The effectuation as a decision-making mode is most appropriate for entrepreneurs whose ventures are faced with high uncertainty (Chandler et al., 2011).

Similarly, one of the major characteristics of any transition economy is environmental uncertainty. Stated by Sus̃jan & Redek (2008), the concept of uncertainty is particularly relevant for the so called transition economies. The uncertainties in transition economies, as

discussed above, mainly come from their institutional building processes. Therefore companies are required to manage their business processes in the face of dramatic institutional change and great uncertainty (Meyer & Gelbuda, 2006). Stated by Huang & Brown (1999) SMEs in these countries not only have to cope with well-known problems typically encountered by SMEs but also are further constrained by external and internal factors arising from the institutional development effort, for example from state intervention in firms' business activities. (Thai & Chong, 2013). In the reports of Central Asian countries it was stressed that the insufficiency of consistent and transparent business legislation, frequently changing laws and regulations add up to a high level of uncertainty (Ease of Doing Business Report, 2015).

Table 3 shows top 30 countries which were ranked high in the Index of Economic Freedom by Heritage Foundation which measures country 's: Property Rights, Freedom from Corruption, Fiscal Freedom, Government Spending, Business Freedom, Labor Freedom, Monetary Freedom, Trade Freedom, Investment Freedom, Financial Freedom. The transition economies do not exist in the top list of five Free economies or almost nonexistent in the group of Mostly Free countries. Transition economies have lower rankings due to high level of uncertainty.

Table3: Top 30 countries in the Index of Economic Freedom (2016)

1 free	<u>Hong Kong</u>	88.6	16 mostly free	The Netherlands	74.6
2 free	<u>Singapore</u>	87.8	17 mostly free	Germany	74.4
3 free	<u>New Zealand</u>	87.8	18 mostly free	Bahrain	74.3
4 free	<u>Switzerland</u>	81.0	19 mostly free	Luxembourg	73.9
5 free	<u>Australia</u>	80.3	20 mostly free	Iceland	73.3
6 mostly free	<u>Canada</u>	78.0	21 mostly free	Czech Republic	73.2
7 mostly free	<u>Chile</u>	77.7	22 mostly free	Japan	73.1
8 mostly free	<u>Ireland</u>	77.3	23 mostly free	Georgia	72.6
9 mostly free	<u>Estonia</u>	77.2	24 mostly free	Finland	72.6
10 mostly free	<u>United Kingdom</u>	76.4	25 mostly free	United Arab Emirates	72.6
11 mostly free	United States	75.4	26 mostly free	Sweden	72.0
12 mostly free	Denmark	75.3	27 mostly free	South Korea	71.7
13 mostly free	Lithuania	75.2	28 mostly free	Austria	71.7
14 mostly free	Taiwan	74.7	29 mostly free	Malaysia	71.5
15 mostly free	Mauritius	74.7	30 mostly free	Botswana	71.1

Source: <http://www.heritage.org/index/explore>, retrieved on 28.11.2016

Limited Financial Resources

One more characteristic of effectual space is the environment with scarce financial resources. Sarasvathy's seminal paper and her subsequent studies with her colleagues have put forth the arguments that effectuation principles - means focus, exploitation of contingencies, affordable loss, and pre-commitment from strategic partners - are more effective than causation-based strategies in maintaining control of the ventures' future when entrepreneurs have limited resources (Dew et al. 2009; Read & Sarasvathy 2005; Sarasvathy 2001).

Affordable loss principle in Effectual theory explains that it is more feasible to invest what you can afford to lose and not the amount set as an objectives startup capital. This means investing the available resources and trying to achieve the best result possible from the amount available and risk no more than you can afford to lose. (Sarasvathy, 2001). To make effective decisions while being in an effectual problem space, entrepreneurs tend to follow the affordable loss principle which is useful in decreasing the role of uncertainty (Sarasvathy, 2008, p. 81).

Heritage Foundation evaluates the level of Financial Freedom in countries. Financial freedom is an indicator of banking efficiency as well as a measure of independence from government control and interference in the financial sector. State ownership of banks and other financial institutions such as insurers and capital markets reduces competition and generally lowers the level of access to credit (Heritage Foundation, Methodology Report). In transition economies banks are still managed by Central Bank of a country. The table 4 below shows the top 30 countries ranked high in the level of the Financial Freedom in 2016. The economy's financial freedom index includes five broad areas: The extent of government regulation of financial services; The degree of state intervention in banks and other financial firms through direct and indirect ownership; Government influence on the allocation of credit; The extent of financial and capital market development, and Openness to foreign competition (Heritage Foundation, Methodology Report).

Table 4: Top 30 countries in Index of Financial Freedom ranked by Heritage Foundation in 2016

1	Australia	90	16	Switzerland	80
2	Hong Kong	90	17	The Netherlands	80
3	Bahrain	80	18	United Kingdom	80
4	Canada	80	19	Albania	70
5	Czech Republic	80	20	Armenia	70
6	Denmark	80	21	Austria	70
7	Estonia	80	22	Belgium	70
8	Finland	80	23	Botswana	70
9	Liechtenstein	80	24	Chile	70
10	Lithuania	80	25	Colombia	70
11	Luxembourg	80	26	France	70
12	New Zealand	80	27	Germany	70
13	Singapore	80	28	Hungary	70
14	South Korea	80	29	Ireland	70
15	Sweden	80	30	Israel	70

Source: <http://www.heritage.org/index/explore>, retrieved on 28.11.2016

From the above top 30 countries that achieved comparatively good financial freedom Estonia and Lithuania did good job in reforms and this has been achieved after more than 25 years of transition process. These two countries, although from former Soviet Union, are located in Eastern Europe and used funds and instructions from European Union in their transition processes. Armenia is another country that has achieved good results in its financial sector. The rest of the countries in the list are not transition economies. Many other countries in their transition economy still have unfavorable financial environment for the conduct of a business.

Usually when entrepreneurs require financial resources they must provide this from their own (or family) saving, or borrow it from financial markets. Neither of these sources is widely available, particularly at the onset of transition. Because under communism, individuals were not permitted to accumulate financial assets, and almost all wealth was owned by the state and this was a major constraint on the possibilities for entrepreneurship (Pissarides, 1999; Chilosi, 2001), this was true in the initial years of the transition process. After a decade, although there is no legal limits to accumulate financial assets, continuous economic crisis and lack of earnings causes the scarcity of financial resources.

Financial markets in transition are often very limited and underdeveloped and the market structure is highly concentrated with banks often achieving only low levels of efficiency. The banking sector is also relatively inexperienced in private sector lending, and project finance in particular, and thus lacks organizational capabilities to finance entrepreneurial businesses (Pissarides, 1999). The evidence suggests that state owned banks continued to favour state owned firms and, to some extent, large privatised firms by providing soft loans (Lizal & Svejnar, 2002). However, they rarely lent to new businesses in private sector, particularly at the start of the transition process (see Feakins 2002; Richter & Schaffer 1996). This was a serious problem for the development of entrepreneurship because financial development has been found to exert a disproportionately large effect on the growth of industries that are dependent on small firms (Beck et al., 2004). This reluctance to give credits for MSMEs stems from the asymmetry of information, i.e. lack of relevant credit and financial information on MSMEs, and limited or lack of adequate collateral. Moreover weak property rights remain a major obstacle to the development of the financial system as they limit the efficient use of collateral in financial transactions.

For example, in Tajikistan lending to small businesses continues to be hampered by lack of transferable land-use rights. In Turkmenistan, despite direct lending from the state, banks can still request collateral which, in the absence of clear property rights, is a major obstacle to SME lending. In Uzbekistan, access to financing of SMEs is limited due to the lack of full land property rights for farmers. (Investments and Competitiveness In Central Asia, 2013). Significant government interventions in the form of subsidised interest rates and direct lending distorts competition and credit allocation. Moreover the excessive level of corruption, makes the credits with low interests available to only networks of people working in banks, or to the government elites.

Capital scarcity poses a problem not only for the establishment of businesses but also for their growth. Case studies suggest that engagement in trade often serves as initial capital accumulation that allows entrepreneur to branch off into a different business (Smallbone & Welter 2001b). Portfolio entrepreneurship is another way for businesses to hedge against volatility of markets in transition.

Lussier & Pfeifer (2000) compare Croatian and US entrepreneurs and find that the Croatians start their business with less capital, less planning and less external management advice. They appear more spontaneous and less systematically prepared in setting up their own business. This would suggest some adaptation of entrepreneurial characteristics to the transition environment. Generally, they adopt strategies that allow them to circumvent burdensome institutions or create substitutes for missing ones. For example, Johnson, McMillan and Woodruff (2002) found that entrepreneurs in transition economies “succeeded by self-help: they built for themselves substitutes for the missing institutions. Reputational incentives substituted for court enforcement of contracts. Trade credit (loans from firm to firm along the supply chain) substituted for bank credit. Reinvestment of profits substituted for outside equity”. Strategies documented in the literature include engagement in trade and diversification of activities as a means of capital accumulation and hedging against risks (Smallbone & Welter 2001) and using network-based transactions to substitute for missing or costly markets (Batjargal 2003; Stark 1996). These are related to the entrepreneurial skills such as building effectual networks, creating partnerships, using available financial resources and shaping businesses based on partner interests discussed in effectuation articles.

The importance of entrepreneurial skills flexible to changes

Sarasvathy (2001) argues that effectuation is the tool when there was no market before, when there is no history of such companies or industries at all, when there was no such an economy before, when there is a complete uncertainty and complete newness . This is another feature of an ideal effectual space where leveraging contingencies by embracing surprises that arise from uncertain situations, remaining flexible rather than fixing to existing goals would be required. Sarasvathy (2001) has proposed effectuation as the dominant decision model for entrepreneurial decision making, particularly in the absence of preexistent markets.

In the case of transition economies there was no such institutions, markets and customers. Organisations, firms and institutions could not rely on knowledge gained from past experience because past experiences can be irrelevant in the new business environment where institutions have changed. Instead, they need to have broad knowledge gained from currently

on-going experience via experimentation in order to react quickly to changes. Meyer and Gelbuda (2006) pointed out, the companies are required to manage their business processes in the face of dramatic institutional change and great uncertainty. Therefore, entry to the East European market often occurs through inter-firm cooperation, especially joint venturing (see, e.g. Meyer & Tran 2006; Törnroos & Nieminen 1999). Unstable institutions as well as constraints on SME, such as lack of managerial skills, international market knowledge, etc., lead firms to focus on short-term strategies and to avoid longer term planning. Similarly Mainela & Puhakka (2014) found in their study that the managers acting in the transition markets particularly need flexibility and constant alertness to changes in the relationship network and the external environment. Proactiveness and innovative use of third-party relationships seem characteristic of acts leading to favorable development. The economic success of transitional economies and its further evolution depends on the ability of international and local firms to adapt to the changing environment in order to face all the challenges/difficulties.

Effectual Network

Another component of an Effectual Space is the effectual network which is posited in the heart of effectuation theory. In effectual context, Sarasvathy (2008) finds that expert entrepreneurs in building a new venture they start with their means. These means can be grouped into three categories: (1) I am- my traits, tastes, and abilities (2) what I know- my education, training, expertise, and experience (3) whom I know- my social and who professional network.

This involves building a network of self-selected stakeholders. This principle includes negotiating with any and all stakeholders who are willing to make commitments to the project, without worrying about opportunity costs, or carrying out competitive analyses. For this the interaction with other people is crucial. The potential stakeholders are not pre-determined, but they emerge from the interaction process (potential customers can become partners, potential suppliers – customers, etc.). This is possible as the goals are not clearly defined and, actually, their shape is a result of the interaction. New stakeholders bring visions, goals, and means into the venture. (Sarasvathy, 2008) Thus, the commitment of the effectual

stakeholders produces new goals as well as new means that belong to two concurrent cycles. Adding new means to the pre-existing ones expands the resources at one's disposal. Actual means are transformed from 'who I am, what I know, whom I know' into 'who we are, what we know, whom we know'. (Sarasvathy, 2008)

Therefore creating new goals modifies 'what I can do' into 'what we can do'. Converging goals/possible courses of action create new markets. Thus, a new market is not the result of the design of a specific person (Sarasvathy, 2008, p. 107) but comes through the interaction of the members of the network and not-yet-members of the network – it is the result of the process.

The necessity of effectual entrepreneurship in network creation is similar to the needs of entrepreneurs in transition economies. A persistently recurring issue in studies of entrepreneurs in transition economies is the importance of networks, across transition economies from China (Peng & Heath, 1996; Batjargal & Liu, 2004) and Vietnam (McMillan & Woodruff, 1999) to Hungary (Stark 1996, Lyles et al. 2004) and Russia (Batjargal, 2003). The way entrepreneurs use networks varies greatly as the practices are often culturally grounded. For example *guanxi* networks in China 'function' in a very different way than '*blat*' networks in Russia (Michailova & Worm, 2003). Scholars from a variety of disciplinary perspectives ranging from economics (McMillan & Woodruff, 2002), to sociology (Stark 1996; Sedaitis 1998; Batjargal 2003), to business strategy (Lyles et al., 2004; Puffer & McCarthy, 2001; Peng, 2001; Peng & Heath, 1996) and entrepreneurship (Smallbone & Welter 2001a,b.) have recognized the importance of the phenomenon, and have investigated its antecedents and consequences that included questions such as why networks are so important in transition economies and which consequences the entrepreneurial sector has if heavily relies on personal relationships. For example, Mainela & Puhakka (2014) state that the insecurities of the transition context and the international joint venture relationships could be seen to emphasize the capabilities to proactively avoid problems and quickly react to unexpectedly upcoming ones. In doing so, partnering with great variety of actors is the primary means for creating impressiveness and influence.

With respect to former centrally planned economies, several authors have described how individuals use social contacts and individual networks, based on strong personal trust in order to pursue business endeavours (e.g., Ledeneva, 2006; Manolova & Yan, 2002; Peng, 2000; Smallbone & Welter, 2001a; Yan and Manolova, 1998). In such conditions, these personal networks represent an important potential resource in identifying and exploiting opportunities associated with institutional holes. (Smallbone & Welter, 2010). Smallbone and Welter (2001) found that 28% of entrepreneurs in Ukraine, Belarus and Moldova- countries are engaged in other occupations. Its occurrence is higher in former Soviet republics, and thus may reflect the need for security and access to resources through networking, which is increased by attracting several owners.

Many scholars relate the prevalence of networking to the absence of a well-functioning formal institutional framework (McMillan & Woodruff, 2002; Peng, 2001). However there is also a view that sees the pattern of networking such as *blat* in Russia as historical and culturally embedded and thus not only as an outcome of the ways the institutional framework has developed during the period of economic transition (Vlachoutsicos, 2000, Buck 2003). Furthermore, the lack of developed business infrastructure and support services leads many business owners to depend on business assistance (financial, advice, etc.) through private networks.

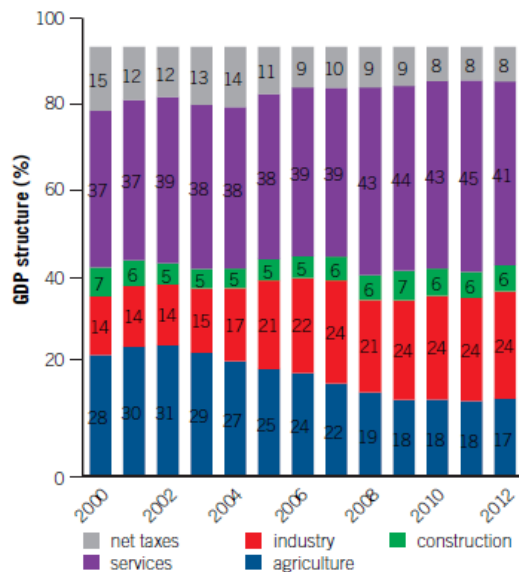
Research on CEE stimulated by sociology thus has emphasized the prevalence of networks as mechanisms of inter-personal and inter-organizational interaction, and thus as a means to access resources, but also as a source of inertia (Stark, 1996; Grabher & Stark, 1997; Kogut et al., 2000). This approach has been developed with respect to Russian entrepreneurs by Batjargal (2003). He considers systems of entrepreneurs' social relations as social capital, which has been shown to enhance entrepreneurial performance in other contexts. In Russia, where pure market transactions are subject to high *transaction costs*, such social capital can be expected to be particularly important. In his empirical study, Batjargal (2003) investigates various dimensions of entrepreneurial networks for the Russian context, and finds that in particular weak ties and resource mobilization (i.e. the ability to access resources through network contacts) enhance revenue growth.

The *transaction costs* argument runs as follows: underdeveloped formal institutions in transition economies cause extensive market failures due to information asymmetries, lack of contract enforcement, high search and negotiation costs and various other effects (Swaan, 1997). In consequence, firms either stay out of these markets or they have to create alternative means to secure themselves. Hence, they build business networks and rely on those relationships to ensure that business partners stick to their side of deals. Moreover, long-term relationships can be built to resemble a repeated game, so the anticipation of benefits from future collaboration outweighs the potential short-term profits of cheating on a partner. These business networks can extend and reinforce the effects of personal reputation. If business partners depend on reputation within a business network, they would be cautious to cheat on anyone in the network as the damaged reputation may outweigh the short term benefits of cheating – as observed by McMillan & Woodruff (1999) in Vietnam.

1.8 Effectual Problem Space of Uzbekistan

Upon independence in 1991, Uzbekistan inherited one of the lowest standards of living in the Soviet Union; the economy was reliant on raw materials such as cotton, gold and natural gas, while heavily dependent on imports of oil, wheat, meat, and most manufactured goods. Against this background in the mid-1990s, the government began implementing a long-run strategy to transform the economy from heavy dependence on agriculture and natural resources to a modern industrial economy. See the Figure 3

Figure 3: Structural Changes in the Uzbek Economy over the Last 20 Years. GDP structure



Source: The Path To Upper-Middle-Income Status In Uzbekistan.
<http://siteresources.worldbank.org/EXTPREMNET/Resources/EP119.pdf>

Initially this strategy was import substitution based, but recently has become more export-oriented and focused on nurturing selected infant industries (in which Uzbekistan might not have a comparative advantage) organized in state controlled industrial associations and state-owned joint-stock companies through open-ended protection.

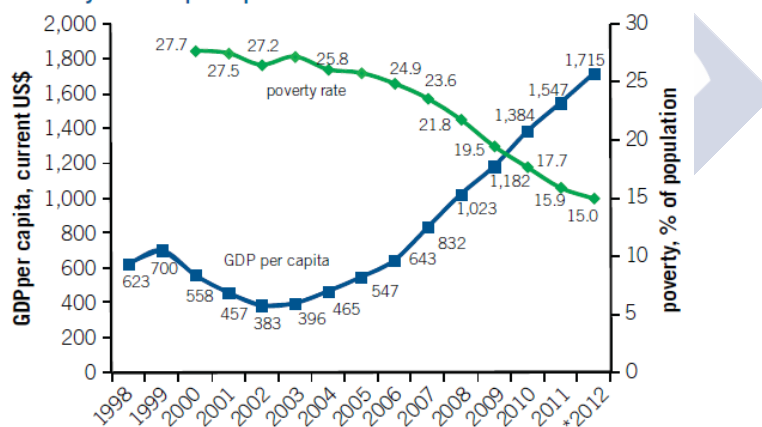
However some sources view the management plans of the government of Uzbekistan as flexible and more likely a short term oriented, for example this is mentioned in the article of Adams & Rustemova (2009), similar to a flexible effectual approach. Adams & Rustemova , (2009) state that especially it can be seen by looking at the definition of progress in Uzbekistan which is set year-to-year by the president and his advisors, who designate an annual campaign that targets a particular social group or problem for state support, such as “The Year of Mothers and Children” (2002), “The Year of Health” (2005), “The Year of Youth” (2008), “The Year of Rural Development” (2009), “ Caring About Elder People” (2015), “The Health of a Mother and a Child” (2016). This method they compare with the governing style of Kazakhstan. While Kazakhstan also followed flexible and broad plans during the first decade after its independence, in the second decade the president has proposed

a plan of Kazakhstan-2030 that sets benchmarks and concrete goals with timetables, that is more similar to a causal approach. Kazakhstan-2030 lays out general priorities, but in its implementation, it has specific short-term goals for every two or three years that are based on a rational, managerial approach to policy making: analysing the problems the government would like to target, evaluating the government's own capacity for solving the problem, analysing threats that might prevent the problem from being solved, and only then proposing strategic actions to resolve the problem. (Adams & Rustemova ,2009)

As a low-middle-income country with a gross domestic product (GDP) per capita of US\$1,715 and a population of 30 million (nearly half of all of the Central Asian population), Uzbekistan has seen stable economic progress since the mid-2000s, both in terms of growth and poverty reduction. Growth has averaged 8 percent per year since 2004 and extreme poverty has declined from 27 percent in 2000 to 15 percent in 2012.

Figure 4: Poverty and GDP per capital

b. Poverty and GDP per capita



Source: The Path To Upper-Middle-Income Status In Uzbekistan.
<http://siteresources.worldbank.org/EXTPREMNET/Resources/EP119.pdf>

Encouraged by this outstanding growth performance, the Uzbek authorities have set an ambitious goal for the country—to join the group of upper-middle-income countries by 2030. (World Bank, 2013).

During the initial ten years after the collapse of the Soviet Union, comparing to Kazakhstan which has adopted an aggressive strategy of liberalization, Uzbekistan has been much more conservative, preferring to transform its economy using its own form of gradualism and slow sequencing of reforms

Uzbekistan has had a much larger emphasis on social and physical investment, and has managed to avoid any large build up of payments arrears, while the country struggled with foreign exchange restrictions, declining exports, import controls, and severe import compression.

In the first decade public investments in Uzbekistan were 7 percent of GDP. Investments in productive physical assets-roads, schools, and other infrastructure-have received special attention in the Uzbekistan government's public investment program. Social sector investments have been protected (at least in relative terms) in Uzbekistan, while this was severely eroded in some other countries such as Russia, Kazakhstan. In 1998, Kazakhstan invested 3.4 and 2.6 percent of GDP on education and health respectively, while Uzbekistan invested 7.2 and 3.3 percent of GDP respectively.(World Bank, 1999)

The imports in Uzbekistan were severely compressed through administrative means and therefore gave an upward bias to the import coverage figures. Similarly, the foreign exchange is administratively set at an over-valued rate.

In relative terms, Uzbekistan saw more FDI flows into sectors with larger multipliers-automobiles, electronics, textiles, chemicals, mining, and agro processing. Much of the foreign investment in Uzbekistan is directed by the Government into sectors that the Government feels are 'strategic' for the future and are consistent with its vision of an industrialized nation.

Measures on improving the investment climate contribute to the growth of attracted direct foreign investments into the national economy. For example, in 2014 the volume of attracted foreign capital has exceeded 4.5 billion US dollars.

Thanks to the improvement of legal framework, 160 licensing procedures and requirements for obtaining a license for 19 types of business activities have been cancelled, statistical and tax reporting has been reduced in the last few years.

Currently, nearly a thousand enterprises established with participation of foreign investments, including the world famous corporations, such as "General Motors", "MAN", "Knauf", "Itochu", "Rieter", "Klaas", "Nestle", "Coca-Cola", "Kogas", "Sasol", "Ariston", "CNPC", "Indorama", "Gazprom", "Lukoil", "Algie", "Lotte", "Sumitomo", "Korea Telecom" and others have already used the competitive advantages of Uzbekistan and favourable investment climate.

In the country, policymakers have revitalized and strengthened the traditional *mahalla* system (which provides decentralized benefit-targeting using local communities) as the primary vehicle for providing social assistance to the most vulnerable groups in the society.

Uzbekistan clearly adopted a gradualist approach, with the idea that the unfettered market may not be compatible with the Government's aims of socioeconomic development. Arguments stress that it takes time to build a new world, adjustment costs can be high and politically and socially destabilizing, and that the pace of new job creation is likely to be slow. (Nuti & Portes, 1993; Dewatripont & Roland, 1992a; Aghion & Blanchard, 1994). In Uzbekistan, gradualism received official support primarily on grounds of national and historical factors including ethnic diversity, the younger age profile of the population, low living standards relative to the rest of the former Soviet Union, the need to maintain social cohesion and stability, and the deeply-entrenched public psychology of dependency on the state. (Karimov, I., 1993) This implied that the state be given a principal role during transition not only as the developer and implementer of reforms and also as the collective entrepreneur, production regulator, and investor in priority sectors.

At the same time, the Uzbeks viewed the creation of market institutions as a precursor to policy reforms, while, for example, the Kazakhs allowed the institutions to develop endogenously with the market. This difference in choice of sequencing was deliberate and reflected the Uzbek view both of gradual step-by-step reforms and the role of the state as the developer and implementer of reforms. However, by the end of the first decade, both

Uzbekistan and Kazakhstan appeared to have progressed to similar levels on institutional reforms pertaining to enterprise restructuring, corporate governance, and competition policy, all central to the transition process (Alam & Banerj, 2000), while the difference between the achievements has increased in the second decade.

The initial approach to privatization of medium and large enterprises in some countries as Russia, Kazakhstan used a model of voucher privatization (except for oil fields), in an effort to quickly transfer ownership to as diversified a population group as possible. This has diffused ownership, and often allowed the old, less innovative managers to effectively retain control without accountability to the diverse shareholders. In Uzbekistan, the approach was guided by the need to transfer ownership to real owners capable of using the property and ensuring its effective utilization. Alam & Banerji (2000). Towards that end, a scheme of privatization investment funds was developed which, while providing for widespread private ownership, also attempted to create independent financial investment entities that would improve corporate governance and promote capital market development.

1.9 The Effectual Features of the Space in Uzbekistan

The central element of effectual space is uncertainty. The uncertainties stemmed from the political, economical, social environment in Uzbekistan do not adjust exactly to the typical features of a transition economy, due to the specificities created by the particular set of policy decisions adopted during the first decade of Uzbek independence, the so-called 'Uzbek Path' (Gleason 2003).

Uzbekistan has a strong, paternalistic state. The Uzbek government portrays itself as the guarantor of the good in society, as well as the arbiter of what constitutes the good. In fulfilling the roles of economic and moral arbiter, the state penetrates extensively into society and relies on hierarchical forms of social organisation to control the population. (Adams & Rustemova, 2009)

In the 1990s, Uzbekistan took a gradual path to a market economy, leaving the state as a major owner and distributor of economic resources. President Karimov has emphasised the idea of the 'Uzbek Path' (to independence, to development, to civil society) (Karimov 1993). The 'Uzbek path' of reform sees the role of the state as ensuring social protection and redistribution and looks to an ethnic past for models of utopia. (Adams & Rustemova , 2009)

The principle of the Uzbek path is still paternalism: the guiding hand of the state (rather than the supposedly invisible hand of the market) controls the economy. The extreme state control over economic development in Uzbekistan allows the government to define a vision of the future divorced from economic reality. Non-compliance is seen as a challenge to the existing regime, an impediment to security, and a detriment to its population. (Adams & Rustemova , 2009)

Frye & Shleifer (1997) conceptually sort governments into three basic styles, characterized by an invisible hand, a helping hand, or a grabbing hand.

“Under the invisible hand model, the government is well-organized, generally uncorrupted, and relatively benevolent. It restricts itself to providing basic public goods, such as contract enforcement, law and order, and some regulations, and it leaves most allocative decisions to the private sector.” “Under the helping-hand model, bureaucrats are intimately involved in promoting private economic activities, they support some firms and kills off others, pursue industrial policy, and often have close economic and family ties to entrepreneurs. ... Bureaucrats are corrupt, but corruption is relatively limited and organized.” “In the final, grabbing-hand, model, government is just as interventionist, but much less organized, than in the helping-hand model. The government consists of a large number of substantially independent bureaucrats pursuing their own agendas, including taking bribes.” (p. 354)

It is known that the prospects of a career as an entrepreneur depend on the economic environment, which can be facilitative or detrimental (Fogel et. al., 2006). A multitude of factors determine this environment: *rules and regulations, the quality of government, the availability of education, and the ambient culture*, factors that fall under the heading of *institutions*. The entrepreneurial use of causal versus effectual logic is determined by the level

and dimensions of uncertainty in the institutional environment (Sarasvathy, 2008). The current state of these institutions in Uzbekistan will be presented below.

General uncertainty elements include a political uncertainty in Uzbekistan which has been elevated due to a lack of transparency regarding who will succeed ageing President of the country, who has maintained tight control since independence in 1991. Tight government control over information damages Uzbekistan's business and investment climate.

Moreover, economy of the country depends on the political conditions of the neighbouring countries due to the contribution of remittances from neighbouring countries to economic growth. The remittances from Russia alone accounted for an estimated 12% of GDP in 2013. However, the recent Russian economic crisis affected not only on remittances but also on demand for Uzbek exports. The dependence of the government on remittances makes it vulnerable to economic fluctuations in neighbouring countries.

Moreover, the economy is heavily reliant on exports (cotton, gold and, to a lesser extent, natural gas) which also leaves it vulnerable to global demand and price fluctuations.

According to the findings of World Bank's (Worldwide Governance Indicators, 2013) Uzbekistan performs poorly on all the six dimensions of governance assessed (voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law and control of corruption). In fact, the country has systematically scored poorly on the control of corruption indicator with a percentile rank of eight in 2013 (where zero corresponds to the lowest rank and 100 to the highest).

In terms of business environment of the country, according to Business Environment in Uzbekistan as Seen by Private Enterprises, (2009) is characterized by a large number of laws and by-laws regulating entrepreneurial activities. Since 1991 more than 16,000 legislative acts have been adopted. The number of these documents grows every year. Moreover, the report states that Uzbekistan has not created an effective mechanism to enable the detection of existing and potential challenges hindering private sector development in a timely and systematic manner. However mechanism is essential for determining and prioritizing steps for

improving the business environment. (Business Environment in Uzbekistan as Seen by Private Enterprises, 2009).

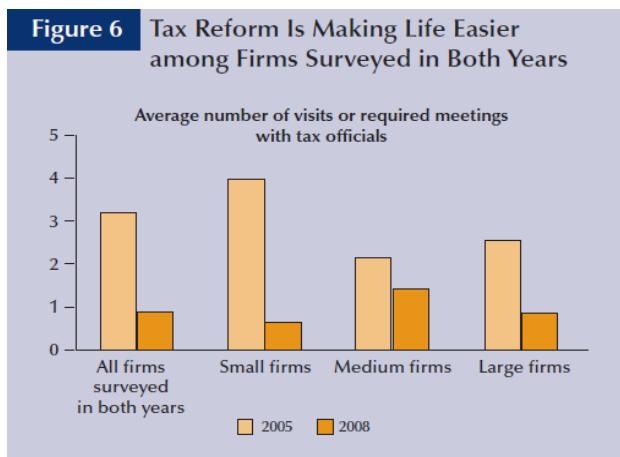
A line of new policies has been developed to improve the business environment during the last ten years in Uzbekistan. However it seems that the findings of Smallbone & Welter (2001b) are equally true for Uzbekistan as well. They found that very often the main reason for ineffectiveness of the existent policies would be the weaknesses of the implementation system, which has been called an “implementation gap”. This means, although the government has already agreed on the new policies in the reduction of corruption or in better enforcement of the rule of law, these policies “do not reach” the lower levels of government administrations, such as city councils and other implementers and therefore staying by the same corrupt rules.

The uncertainties of regulatory environment

Taxes. The government of Uzbekistan has been reforming the tax system since the initial years of the independence. Tax rates are subject to regulation by the Cabinet of Ministers. Early tax reforms were mainly directed towards the fiscal role of taxation and underestimated regulatory, social and stimulating roles of taxation. This short sighted fiscal policy negatively affected private sector development, investment and employment and led to the rapid growth of an informal economy. More recent reforms in taxation were directed towards the reduction of the tax burden, optimization of the structure and rates of taxes, simplification and unification of tax system, as well as increasing the stimulatory and regulatory functions of tax policy (Dehkanov, 2011). During the period of 2000 – 2007, the tax burden in the economy reduced from 40% to 27%.

The Revision of the Tax Code of Uzbekistan in January 2008 led to the reducing tax burdens, enhancing of the role of taxes, stabilizing the tax system and improving the tax administration. See the figure 5.

Figure 5: Tax reform is making life easier among firms surveyed in both years



Source: Enterprise Surveys, 2011

Even under new tax system some enterprises are subject to additional payments to local budgets above the single tax payment. These payments are usually in the form of trade duties for selling alcohol, tobacco products, items made of precious metal and stones. Enterprises also have to pay excise tax, custom duties and VAT if they import materials or supplies. The biggest advantage from single tax payment system receive service enterprises that usually pay only single tax.

In 2008 single tax payment rate was 8 % and 7% in 2009. (Ozbekyengilsanoat, 2008). But the rates of single tax varies due to the business type of enterprise. The current rates of single tax consist from 5% to 7% depending where the business is located and what type of activity is performing. However, according to some unofficial sources, the entrepreneurs still show some concern about taxation system. According to them on paper it is fine, but in reality it is more complicated, and there is no transparency in rules and regulations, and by the end of the day you will have to pay 20% of the revenues for taxes.

The adoption of the new Tax Code of Uzbekistan failed to solve all problems related to taxation. International studies indicate businesses in Uzbekistan face some of the highest tax rates in the world. According to Doing Business 2009, Uzbekistan ranks among the top ten countries in the world in this indicator. (Business Environment in Uzbekistan as Seen by

Private Enterprises, 2009). Certain tax rates are relatively low if taken alone, such as the Single Tax Payment (eight percent of turnover in 2008) or Corporate Income Tax (10 percent of profits in 2008). But even companies using the simplified tax system pay a high number of taxes and obligatory payments. Social insurance contributions constitute a particularly large burden for businesses. For every 100 soums of net profit retained, a business must hand over 170 soums in the form of taxes and obligatory payments. On average, enterprises are subject to seven taxes and obligatory payments, even under the simplified system. (Business Environment in Uzbekistan as Seen by Private Enterprises, 2009)

The lack of information, not clear taxation system and therefore a high level of uncertainty are observed in this sphere. This is confirmed by the results of the IFC survey “Business environment in Uzbekistan as seen by small and medium enterprises, 2009”, around 62% of respondents were not happy with the taxation system. Additionally, tensions between entrepreneurs and tax regulation officers, frequent complaints and slow processes are the evident problems.

At the present time the taxation burden is less than it was in the previous years. However, according to several official and unofficial sources, some improvements in the qualifications of tax inspection personnel, the use of electronic report submission, more clear criteria for report assessments, access to electronic written regulations are needed in order to reduce corruption, time and efforts in the processes. Some taxes, such as income tax, are still high which encourages both employer and employee to decrease the official salary rates. (Business Environment in Uzbekistan as Seen by Private Enterprises, 2009)

The importance of networks

Because the government initially controlled every resource, entrepreneurs must instead leverage their social resources (networks) to gain access to resources external to the firm (Manolova et.al., 2010). Thus, control advantage may prove to be more important than ownership advantage. Finally, because the institutional environment is still very much state-centered, entrepreneurs need to negotiate constantly with state officials whenever there is a new policy change affecting their business. Negotiating skills and political capital, therefore,

may become important sources of competitive advantage in the context of transition economies (Manolova , 2010).

The networks play an important role in entrepreneurship anywhere in the world. The networks play even more significant role in the entrepreneurial environment of Uzbekistan. Many people obtain the information about suppliers, products, customers by asking other stakeholders, players in the market, instead of searching for an official information which, in reality, does not exist. The credit from a bank cannot be obtained simply by going to the bank and applying for it. The networks of people and bribes accelerate the process. Normal entrepreneurs are even more challenged by the competition created by government elites. Using vast personal networks, (both domestic and abroad) formed through their working experiences, government elites have they own businesses as they acquired ample opportunities to buy any necessary raw materials and gain exclusive access to financing, market information, business infrastructure at low costs. With still underdeveloped market institutions and imperfect legal framework these “entrepreneurs” create unhealthy competition and in some cases monopoly by closing the cheaper supply chains and deliberately establishing high administrative barriers for the new entrants while working toward their own interests (this approach was named as “rent-seeking” by Krueger (1974)).

A very good negotiation and communication skills with different inspectors are needed in order to fulfil the weaknesses of the existing legislation. As stated in “Business Environment in Uzbekistan as Seen by Private Enterprises” (2009), many ambiguities and contradictions in legislation enable inspectors to interpret legislation in light of their own interests. One example is due to delays in currency conversion, importers face exchange rate discrepancies. And although there are no stipulated procedures for reporting it, tax inspectors may interpret it as an offence. To correct that situation for the benefit of the firm, the entrepreneur either should have strong networks, or strong negotiation and communications skills. Or he needs extreme creativity to avoid the problems.

Furthermore, existing “rules of the game” often push companies into violations. Even tax inspectors concede that there are numerous objective reasons related to current legislation and government regulatory practices that essentially force businesses to commit offences.

Entrepreneurs and officers of inspection agencies often mention the following about the restrictions on cash and non-cash transactions of businesses:

“There are restrictions for retail traders not to sell for bank transfer, and for wholesale traders not to sell for cash. But if an organization is willing to buy goods in my shop, where does it get the cash? Unwillingly, you have to break the law, either I sell the merchandise for bank transfer, or the buyer will obtain cash somehow”. (from Business Environment in Uzbekistan as Seen by Private Enterprises, 2009)

“You cannot buy many goods for bank transfer. Where do I get the cash? That’s why we have to sell some of the goods informally”. (from Business Environment in Uzbekistan as Seen by Private Enterprises, 2009)

The statements of entrepreneurs about the difficulty with timely withdrawals of cash from bank accounts that force businesses to partially hide their cash receipts:

“In order to withdraw cash from the bank, you have to wait for at least a week. What if you need something urgently? We keep cash just in case we need to buy something for production needs.” (from Business Environment in Uzbekistan as Seen by Private Enterprises, 2009)

Society and the invisible hand (Smith, 1776) can provide resources and incentives to promote entrepreneurial activities, but if inappropriate conditions prevail, then “entrepreneurs” will utilise these resources for personal gain at the cost of economic growth. Baumol (1990) thus argues that entrepreneurial individuals channel their efforts according to the quality of prevailing economic, political, and legal institutions. Accordingly, this institutional structure determines whether entrepreneurial efforts are channelled to productive or unproductive outcomes. Importantly, Sobel (2008) claims that productive entrepreneurship is the fundamental source of economic growth and wealth creation. Where institutions provide secure property rights, a fair judicial system, contract enforcement and effective constitutional limits (Sobel, 2008), this reduces the profitability of unproductive entrepreneurship, so that individuals are more likely to engage in new wealth creation. Thus, the decision to “entreprendre” in this approach is influenced by the rate of return or profit rate of alternative

activities, which themselves are determined by the quality of political and legal institutions. Good institutions draw entrepreneurial efforts towards productive activities while maintaining higher rates of economic growth. (Minniti & Lqvesque, 2008) explain that new institutional economics substantiate the relationship between institutions and organizations first noted by North (1990).

Throughout the described challenges in the environment, the entrepreneurial entrepreneurs of Uzbekistan manage to grow their businesses (that include both productive and unproductive entrepreneurship) and achieve considerable results both by local sales and exporting. However most of their entrepreneurial skills are spent on resolving the problems of inefficient systems, even so the number of businesses with high quality innovative products and services is increasing. Without networking and negotiation skills this could not be achieved.

Lack of reliance on formal management, business education

During the Soviet Union time there was no private sector, and therefore no education provided to learn how to run businesses. Therefore, those who graduated during the Soviet Union time, (those who are currently running big organisations, state banks, private businesses) do not possess with management, marketing, financial management education, although probably possess with high engineering or mathematical skills.

After independence from the Soviet Union, in 1997 Uzbekistan revised its laws on education to begin the transition towards a system that would be more responsive to a demand-driven economy. Uzbekistan has made a major effort to rebuild the education system in the period after 1998. The period of compulsory education was extended to 12 years (ETF, 2010).

The fundamental changes taking place in the labour market and employment in Uzbekistan – including development of new production technologies – requires the recruitment of qualified professionals.

Taking into account the increasing role of small private business in the development of the economy, all curricula of vocational colleges and academic secondary schools now have an

80-hour course on “Fundamentals of Business and Entrepreneurship”. This course was introduced on the basis of the syllabus developed by the International Labour Organisation. Several short-term courses of vocational training of adults have also been undertaken in cooperation with the Ministry of Labour and Social Protection (OECD Working Group on Human Capital Development in Central Asia, 2011).

Although there has been progress in educational system reform, the process is far from finished. Vocational institutions are often small and widely dispersed, and not all are equipped with modern equipment. The quality of education remains a major concern and training programmes are not co-ordinated (ETF, 2010, OECD Working Group on Human Capital Development in Central Asia, 2011).

The findings of World Bank survey (2013) show that for a region with relatively high and expanding educational attainment (as measured by the number of years of completed schooling due to the change in academic program in schools and colleges in Uzbekistan) and relatively high-quality education in the early years of schooling, a shortage of worker skills has emerged as one of the most important constraints to firm expansion.

Employment trends in the region reflect this new reality: jobs have been shifting significantly from unskilled to skilled labour and the wages of highly skilled workers have dramatically improved over the past 20 years. This shift parallels an economic transition that has involved intensive enterprise restructuring as the country moved from centrally planned to market-based economies. New skills have come into demand, as employment has been allocated away from declining industries and firms toward expanding ones. In addition, there has been a large-scale shift of jobs from agriculture and, to a lesser extent, industry towards the service sector.

Research indicates that this change in demand has not been adequately met by an adjustment in the supply of skills, resulting in a kind of skills “mismatch” throughout the region. In fact, many modern firms in Eastern European and Central Asian countries view the lack of necessary skills among potential workers as a major impediment to their operations and development. These needed skills include not just the ability to apply knowledge and solve

tasks, but also the ability to work as part of a team—just one example of the type of behavioural skills increasingly desired by employers.

Workers in today's economies are increasingly required to solve complex and unexpected tasks in their jobs, which involve fewer and fewer simple, predictable activities. In addition, workers must be able to master changing technologies and make sense of large amounts of information.

According to the World Bank survey (2013) in countries as diverse as Croatia, Poland, Russia, Uzbekistan, and Tajikistan (listed in order of gross national income [GNI] per capita), there is a shortage of workers with professional or technical qualifications and a surplus of workers with basic skills.

The same survey article indicates that although the education offered in many ECA countries is respectable for their level of income, it does not appear to be good enough (or of the right relevance) to meet the rising demand for skills in the region. Educational quality is not demonstrating reliable progress. It is not improving at the lower secondary level, a weakness that is probably mirrored at the upper secondary level (albeit with a lag). (The Demand for Skills in ECA, World Bank, 2013)

As a result insufficient technical, managerial, and professional skills constrain profits of businesses.

The recommendations by OECD EURASIA COMPETITIVENESS PROGRAMME were as following: "Within the education system of Uzbekistan, vocational education has a dominant position leading to enrolment rates that are considerably higher than in neighbouring countries. Social partner involvement is well developed, with a mechanism in place that provides for equal involvement of employers and trade unions. Despite these mechanisms, the involvement of small enterprises lags behind that of the other social partners. Their participation would contribute to the creation of programmes that are more applicable to the labour market's needs, as the transition of the vocational education and training system in Uzbekistan remains incomplete and some outdated training schemes persist.

Strengthening the database is another step towards the development of coherent vocational education and training policies. This includes regularly using analytical tools such as tracer studies with graduates and employer surveys to better match their respective needs. Evidence-based policy making is taking place to some extent. However, the collection of data through tracer studies and employer surveys would provide data for more sophisticated planning.”

Lack of data and information

SMEs in Uzbekistan face the informational deficits in a number of areas. First, there is a lack of adequate information on the national and foreign markets and on market opportunities prevailing there. In an IFC survey of 1500 SMEs in Uzbekistan it was found that the lack of information on demand conditions and customs regulations in foreign markets was two of the five most important obstacles to exporting .

Another area where SMEs lack adequate information is legislation according to IFC (2002), and this is still true. This leads to not knowing their obligations and rights, with the negative consequences resulting from this. Moreover SMEs needs information on various areas of business, such as accounting, financial analysis, marketing. They need to know the trends in consumer behaviour, the availability of new suppliers, new programs for bank credits. The scarcity of the sources of information such as commercial portals, consumer databases, and international and local market surveys is the big obstacle to the daily operations as well as to strategic developments of businesses.

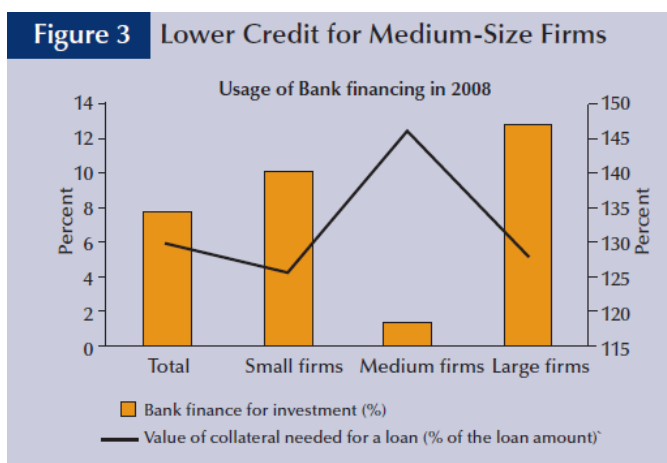
The limited information about markets, consumers, competitors and supply change makes it a challenge to prepare business plans for bank loans. The limited information sources about bank loans reduce the chances to get the best suitable loans.

Limited financial resources

Limited financial resources is mentioned as one of the elements of the effectual space. Globally, Uzbekistan stands at 104 in the ranking of 189 economies on the ease of getting credit (Doing Business in Uzbekistan, 2015). Among Uzbek firms, external financing is the

exception, not the rule. Uzbekistan is the country with both the highest level of internal financing for investments and the lowest level of banking financing in the region, see the figure 8, (Enterprise Surveys, Running a Business in Uzbekistan, 2011). There is a large financing gap between small business credit demand and the loans supplied by commercial banks. Although 94% of small businesses have an account at a financial institution, only 9.6% have outstanding credit at a financial institution. In 2014, total bank lending to small businesses was only 6.3% of GDP (Asian Development Bank, 2015)

Figure 6: Bank Lending



Source: Enterprise Surveys, 2011

Starting capital & high cost of financial loans are a major challenge for entrepreneurs. The banks are lending at very high rate of up to 18% which is very high and generally young talent have no confidence to take such high risks for any business. According to the findings of the survey of the World Bank (2009) the businesses are increasingly investing borrowed funds.

Therefore there was an increase in the need for other forms of credit. One of these alternative forms of credit is microfinance. During the last decade Uzbekistan has taken significant steps in establishing the legal framework for the development of microfinance. (Development Focus, Issue 6, March 2012). Despite this, a comprehensive legal framework the microfinance sector has not yet realised its potential.

The microcredit is provided to small businesses in non-cash form by commercial banks with preferential interest rates (2-12% annually). Such microcredit is aimed predominantly at small industrial enterprises, which represent only 8.2% of the total number of small businesses. Access to these services remains low, with microcredits constituting only 5-6% of the bank's credit portfolio. (Development Focus, Issue 6, March 2012)

Microcredits (loans) to private entrepreneurs and the public, provided by non-bank credit organisations, have higher interest rates (60-70% annually), but with easier access and in cash. In 2010 the share of non-bank credit organisations in the total microcredit portfolio of all institutes involved in microcredit activity in Uzbekistan rose to 48.9%. Credit unions in particular expanded rapidly, which in turn increased competition in the sector and thereby reduced interest rates. Credit unions became increasingly popular (between 2004-2010 the number of their participants increased by a factor of 15) and as such they emerged as significant financial actors. However, credit unions' activity have been ended in 2011, and a growing demand for microcredit shifted onto microcredit organisations and pawn shops, raising the cost of services in the microfinance sector.

Alternatively, bank products tend to target enterprises with profitable investments and sound collateral. Commercial banks view lending to small businesses to be costly and risky. The transaction cost of providing a microcredit loan is higher than for credit to a large enterprise. Small businesses often lack profitable projects with stable revenues, sufficient collateral, or credit histories. Banks need assurance that the owner of a small business will be able to repay the loan and that banks can earn a return on their investment.

Collateral requirements are generally high for small businesses, at 146% of the loan amount, compared with 128% for large companies.(World Bank, 2011) Alternative sources of collateral and security such as future cash flows, business reputation, third parties, or group guarantees are rarely considered acceptable. Insufficient collateral limits the size of loans and constrains entrepreneurs' access to larger loans for business expansion and capital investments. (The World Bank's Enterprise Survey, 2010)

The availability of finance from banks is strongly related to the enforcement of rules and property rights in general. Because Uzbekistan adopted a gradual approach to economic reforms, its reforms in the financial sector were also undertaken slowly. The initial period of intensive reform over 1992-1997 was followed by a dramatic reform slowdown and even reform reversals during 1998-1999. However, since 2000, the government has again begun to advance some reforms although with some obvious reluctance. (Akimov & Dollery, 2009).

By far the most serious problem in the banking sector in Uzbekistan has been frequent and widespread intervention of the state into the banking sector. This intervention takes a number of forms. Firstly, the Central Bank of Uzbekistan continues to be a governmental structure, which does not conduct its policies independently. All decisions of the Central Bank are designed to serve economic policy decisions of the government. Secondly, the Central Bank of Uzbekistan (CBU) and other state structures (i.e. ministries and agencies) tightly control and intervene into the decisions of the commercial banks, both state-owned and private. A good example is the Presidential Decree (in May 2006) to rename the 'private' Tadbirkorbank to the Microcreditbank, and grant substantial tax benefits to the bank for the provision of micro-credit to small and medium-sized businesses. Another channel of controlling the activities of private banks occurs by means of approving the appointments of senior managers in all banks. (Akimov and Dollery, 2009).

An additional problem in the banking system is that some policy makers (including those in CBU) are the reluctant participants in liberalisation efforts, as they lack regulatory competence of a managing modern banking system. The CBU uses the same approach to governance as that employed during the communist era. It intervenes in all spheres of banking through directives, orders and frequent (and disruptive) inspections. Often a method of 'confidential directives' is used if a policy of the CBU contradicts formal regulations. Commercial banks execute such orders (in fear of negative consequences) and have to take the blame for breaking formal regulations. The procedures for appointing CBU's senior management are also not transparent. (Akimov & Dollery, 2009).

Low confidence amongst the general population and private business is another problem that constrains the development of the banking sector. Three major reasons for this ongoing lack of confidence can be identified:

- ✚ Notorious past behaviour by the government towards the savings of the population is an important factor. Many people lost substantial amounts of money after the collapse of the Soviet Union, through the various currency conversions and numerous constraints on access to their money in the past;
- ✚ Excessive legal responsibilities are placed on banks regarding tax enforcement and easy access by the law-enforcement agencies to the details and transactions of account holders. Current legislation, including the Act 'On Bank Confidentiality', obliges banks to provide account details to various law-enforcement agencies, including police, prosecutors, intelligence agencies, tax officers and other officials. No court ruling is required for gaining access;
- ✚ Ongoing problems of businesses and individuals to access their funds in their own bank accounts and secure cash withdrawals greatly undermines trust in the banking sector. In conducting a tight monetary policy, the CBU often restricts cash currency circulation by obliging banks (again by 'confidential directives') to restrict the amount of cash withdrawals from bank accounts both for individual account holders and businesses. The limited number of cash dispensers, together with the frequent lack of currency in these machines, constrains the development of plastic card operations. Restrictions on cash withdrawals create situation where many small and medium-size businesses run two separate cash records: a bank account and unreported cash (currency). The bank account is used to make all official payments, including taxes and wages. Unreported cash proceeds are used to pay for some of the goods and services, to top-up wages and profits, and even to pay bribes, if such a need arises. The advantage for business to use an unreported cash cycle resides in the ability to buy and sell a greater variety of goods and services at a lower price than by bank account in addition to obvious tax evasion. As a result, the value of cash and non-cash (i.e. bank account) money in the economy has been different to the point that some firms (usually in retail sector) offered services of converting non-cash money into cash money. The conversion ratio varied over time depending on relative level of difficulty to access bank accounts and the conversion amount.

Although a large number of regulatory documents were issued during the period 1991-2006, there are still 'grey' areas (especially in relation to foreign trade and capital movements) that require the attention of policy makers. For instance, there have been cases when courts made decisions against commercial banks that had followed international practice in their foreign operations, but where no local regulations were in place. In addition, the large number of legislative documents that have been adopted over the years have created some contradictions between different regulatory requirements. (Akimov & Dollery, 2009).

Because the banking system is heavily influenced by the institutional environment in which it operates, problems with the legal system, which are typical for the economy as a whole, also apply to the banking and the financial sector. The country's legal system is still in poor shape in relation to property and contract rights. Since the financial system greatly depends on an improved judicial system, property rights and contract rights should be firmly established and their legal clarity improved. Moreover, it is essential that their enforcement is impartial, transparent and fair. Without these basic legal conditions, both the development of the financial system (and indeed the economy as a whole) will remain greatly hampered. (Akimov & Dollery, 2009).

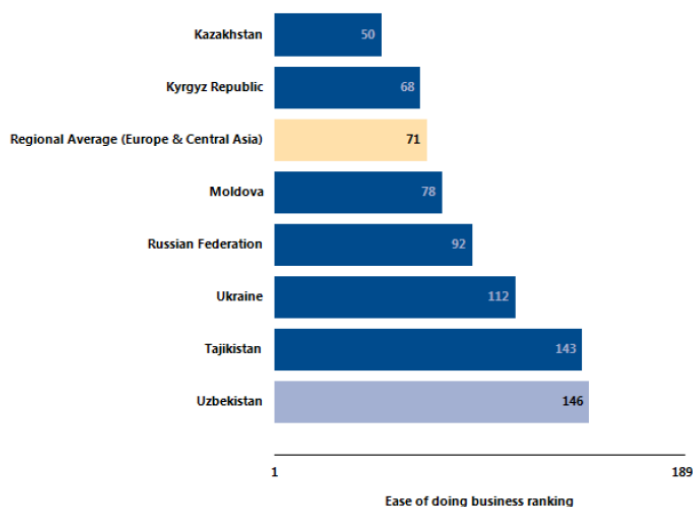
In general, the low level of competence and skills in the modern banking (including management skills) continue to pose serious constraints to development of the Uzbek banking sector. Poor remuneration of bank employees is one of the contributors to the problem. Since the introduction of wage restrictions in state-owned commercial banks by the Central Bank, a large number of qualified personal have left their jobs. This is also a significant problem for the CBU itself. As a result, the 'brain-drain' of skilled staff has been high both in the Central Bank and in state-owned commercial banks.

Lack of competency in modern banking and managerial skills is also reflected in poor governance of the CBU and many commercial banks. Governance structures are excessively centralised; initiative, innovation and service development are thereby generally discouraged.

The importance of entrepreneurial skills flexible to changes

The importance of entrepreneurial skills flexible to changes is another aspect of the effectual space. The entrepreneurs of Uzbekistan are extremely flexible, tolerant to changes and highly entrepreneurial. Otherwise it would not be possible to succeed in a country which globally stands at 141 in the ranking of 189 economies on the ease of doing business (see the Fig. 9). This is confirmed by the fact that the share of SMEs on GDP is continuously increasing each year, reaching to 56% in 2015 comparing to 50% in 2010 and this is achieved while there is a lack of bank credits, unfavourable taxing, lack of relevant information and skills and existence of all types of uncertainties discussed above. Being causal in entrepreneurial approach seems not possible, as this would mean developing a detailed business plan, raising a capital stated in the business plan, doing a marketing research with reliable information about customers, competitors, laws and regulation, and employ the needed skills for all of these and strategically grow the business. This leaves much space for effectuation – which means being entrepreneurial in a highly uncertain environment using the resources, networks and skills available in hand. *Constrained creativity*, the feature of effectual approach, seems the most viable strategy in order to be able to survive and moreover to grow a business in a transition environment of Uzbekistan.

Figure 7: How Uzbekistan and comparator economies rank on the ease of doing business



Source: Doing Business, 2014

1.10 Preliminary Assumptions

To be causal means to possess with formal management, marketing, financial management skills, to possess with marketing secondary and primary research data, to possess with enough financial resources and to be in a well developed stable institutional environment. These criteria are not accomplishable in the transition economy. The entrepreneurship and private sector are new for any country with transition economy, as discussed above, and therefore a business education do not have a good quality. The information about customers, rules and regulations, competitors and foreign markets is hardly obtainable. The banks and other financial entities do not possess with enough financial resources for entrepreneurs, and people do not possess with own savings due to the previous communistic regime of these countries. The environment is highly uncertain due to the constant institutional changes, corruption and unavailability of information about the changes in legislation. The market context of transition economies is dynamic and hostile, characterized by economic, social, and political instability and uncertainty (Newman, 2000).

Due to the circumstances with lack of financial resources (Doing Business, 2015), with high importance of networks (Mainela & Puhakka 2014), with high level of uncertainties (Susjan & Redek 2008) and lack of quality business education (ADB, 2015; ETF 2010) and with lack of quality information (IFC, 2002) entrepreneurs of transition economies have to rely on three things: who they are; what they know; and whom they know and a constrained creativity is a powerful element of their survival strategies.

1.11 Conclusions and recommendations for future research

In this chapter we discussed about uncertainties focusing on the uncertainties occurring in the transition economies. Discussion of the uncertainties in the business environment of transition economies gives more meaning when related to the institutional theory since the major source of the uncertainties in these countries is the transformation process of the government from a centrally planned economic system to a more market oriented system. (Smallbone & Welter, 2001b)

A special focus was given to the discussion of uncertainties in Central Asian countries and other former Soviet Union countries, where the source of uncertainties is a lack of stable institutional structure and therefore a highly volatile business environment. A huge number of research papers discussed the business environment in transition countries where they focused on problems such as high level of uncertainty, the limited financial resources for entrepreneurs to start up or grow the business, the importance of entrepreneurial skills flexible to changes, highly reliance on entrepreneur's own networks in daily administration and strategic actions of the firm. Hundreds of articles were dedicated in studying one or more of these problems in the transition economy. While reviewing the literature we discovered that the environment of transition economies, broadly discussed in previous studies, highly coincide with the environment which is called Effectual problem space by Sarasvarthy (2001a) in her Effectuation theory.

Building on Effectuation theory and Institutional theory, we brought together specifications of an effectual space and compare them with ones of transition economies. As one of the contributions of this paper, we opened a new discussion area within the Effectuation theory by proposing that the ideal effectual problem space with high (Knightian) uncertainty, together with goal ambiguity and environmental isotropy is found in the transition markets. The discussion of uncertainties, stemmed from institutional settings and government regulations, through the lens of Effectuation theory is the first in the literature and this is our contribution to this field.

According to Sarasvathy the effectual space forces to make effectual decisions in order to achieve better performance. Does this mean that entrepreneurs in transition economies use effectual logic in order to achieve success? Is the reason for rapid growth in the share of small and medium sized businesses in transition countries is due to the use of the effectual logic? Which entrepreneurial logic effectual vs. causal is more feasible in the transition economies? And how far the Effectuation theory and Institutional theories can be integrated together? These questions open new opportunities for further research.

A special attention in our discussions was given to the effectual space in Uzbekistan. The uncertainties stemmed from the political, economic, social environment in Uzbekistan do not adjust exactly to the typical features of a transition economy, due to the specificities created by the particular set of policy decisions adopted during the first decade of Uzbek independence, the so-called 'Uzbek Path' (Gleason 2003). Each component of an effectual space was discussed in the current practices of entrepreneurs in Uzbekistan. The discussion of uncertainties, stemmed from institutional settings and government regulations, through the lens of effectuation theory is the first in the literature and this is our next contribution to this field.

The discussion of a business environment in the Central Asian countries including Uzbekistan should be interesting due to the most rapid temps of growth of the share of small and medium sized businesses, while these countries rank in the lowest positions in terms of ease of doing business and in indexes of business and political freedom. Notwithstanding a high level of uncertainty this environment could be a good environment to start and run a business. There

are several possible reasons for that: there are many unavailable products and services which are necessary for living and therefore big opportunities to run new businesses, the high level of unemployment and therefore increasing self-employment, lower competition from foreign countries due to the import reduction policies therefore easier business running without sophisticated marketing technologies, SME export support program which includes no tax and no obstacle policy for SMEs for their exporting activities as practiced by Uzbekistan, which encourage a growth towards exporting. If it is a good environment to run a business, then does uncertainty positively relate to the increase of the share of small and medium sized businesses sector? This question was answered in the next chapter by running a time series cross sectional analysis of fifty two countries using a mixed effects model.



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Paper 2

2. Does Uncertainty Matter? The Impact Of Uncertainty On The Share Of The Sector Of Micro-Small-Medium-Sized Enterprises Worldwide

Abstract

We proposed and tested a model of the effects of environmental uncertainty on the size of the sector of Micro, Small, Medium sized Enterprises (MSME) using a panel data from 53 countries. Our aim was to see the difference in the effect of uncertainties in transition vs. developed countries. We argued that in comparing data with different countries a special attention should be given to the type of economy concerned in each country and therefore its effect on the relationship between uncertainty and its MSME sector size. In order to capture differences in individual countries and group of countries we used mixed effects regression model. We predicted that the effect of the level of uncertainty would not be significant and that other country specific factors would lead to the increase in size of MSMEs even in highly uncertain environments. The data provided supports for the importance of individual characteristics of each country or groups of countries and that the uncertainty level itself cannot explain the size of MSME sector. The data demonstrated that notwithstanding a high level of uncertainty some countries were able to achieve strong growth in MSME sector in the given period of time. Moreover some other unobserved factors brought to the decrease in MSME sector size in the countries with lowest level of uncertainty.

2.1 Introduction

Micro, Small and Medium enterprises (MSMEs) are considered the backbone of an economy. These companies represent an essential source of economic growth . (Eurostat) Small enterprises are very important in promoting competitiveness and to bring new products or techniques to the market. According to the Organization for Economic Cooperation and Development (OECD), MSMEs represent more than 95% of enterprises and ensure 60-70% of the jobs. The countries with a bigger income per capita tend to have a larger number of registered companies for 1000 persons. The MSMEs have a direct effect on GDP growth. (Dalberg, 2011)

For policy makers it is a key question to foster the growth of MSMEs and accelerate the employment generation since small and medium enterprises are the biggest contributors to the employment of labor from a country. A study (Meghana et al., 2011) made on 47745 firms from 99 countries during 2006-2010 proved this. In the evolution of all the transitional economies the Micro, Small and Medium Enterprise (SME) sector carries great hopes and great burdens. In our previous study we discussed about highly uncertain environments of transition economies, and that these uncertainties are due to the weaknesses of institutional settings in these economies. Therefore it is important to create, through the right institutional design, a free business environment to increase the number of successful MSMEs in transition economies.

The comparative study of the effect of environmental uncertainties in transition economies vs other developed economies on the size of country's MSME sector has not been explored yet, while there were some related research in general. We aim to contribute to this field by examining the actual effect of uncertainties on the size of MSME sector in countries, while analysing whether this effect is consistent through different economies. The empirical evidence on the effects of uncertainties on MSME sector size remains scarce. There are some relevant studies in the literature about the effect of uncertainty on individual MSME size, and not on the sector size, even these findings regarding to their effects are still appear inconsistent. For example, while West & Drnevich (2010) found that there were no significant

effects for the interaction effect of firm size and uncertainty, Ghosal & Ye (2015) confirmed that the smaller firms are the ones most likely to be adversely affected by uncertainty due to their greater likelihood of being financing constrained.

Prior research considered all the countries as equal when comparing the size of MSME sector in relation to the business environment. We consider that while comparing countries with different economies we should be careful and some individual and group characteristics should be taken into account. In order to address these gaps, we will first review the related literature and see in table the growth ratings of MSME sector for different countries with different economies. Subsequently the research methodology in measurement of transition specific uncertainty and the size of MSME sector will be explained in detail. Given the current state of the literature we selected Susjan & Redek's (2008) measurement of uncertainty and adapted it to the countries in our data. A strongly balanced panel data with 53 countries which include countries with transition, emerging and developed economies will be explored by using mixed effects regression analysis. We grouped the countries based on economy types, because this would show how different is the role of uncertainty based on the type of country's economy. After a discussion of our analyses and results the conclusions will be highlighted. Finally, some limitations and suggestions for further research will be pointed out and some implications for policy makers will be provided.

2.2 Literature Review

In the first chapter of this thesis we discussed about uncertainties focusing on the uncertainties occurring in the transition economies. It was concluded that transition economy can be called as Effectual space, the term first proposed by Sarasvarthy (2001) in her Effectuation theory. This is because both transition economy environment and a described effectual space environment share the same features such as high level of uncertainty, limited financial resources, the importance of entrepreneurial skills flexible to changes, the importance of networks, lack of reliance on formal management and business education, lack of data and information, the need for the constrained creativity.

In the field of organization and management it is rarely found articles that not mentioned the phenomenon of environmental uncertainty (Samsami, et. al., 2015). Uncertainty always exists in some level. Therefore, one of the incorrect views is thinking that the world is quite certain and we can make accurate predictions about the future, or is completely uncertain and unpredictable. Ignoring uncertainty may lead to strategies that are not resistant against threats and cannot benefit from the opportunities arising from uncertainty.

There is a big number of articles that analysed the negative effects of environmental uncertainty on SME business performance. Koh & Simpson (2005) showed that a different group of underlying causes of uncertainty significantly affects the product late delivery performance in manufacturing environments in SMEs. The negative effects of uncertainties in transition economies specifically were studied by Roman (1991) World Bank (1995), Roberts and Tholen (1998), Bohata and Mladek (1999), Slonimski 1999, Glas et al. (2000), Muent et al., (2001), Pissarides (2000), Roberts and Zhou (2000), Bartlett (2001), Bartlett and Bukvic (2001), Hashi (2001), Smallbone & Welter, (2001), Kaganova (2002), EBRD (2002), Aidis (2003), Radaev (2003), Aidis (2004), Alexandrova (2004), Pissarides (2004), Estrin & Mickiewicz (2010) and others.

On the other hand, there are investigations that revealed strategies of using uncertainty for the development. In the first chapter, based on effectuation theory, we made a preliminary assumption of the fact that uncertainty in transition economies may motivate employees become more effectual rather than stopping the business or not starting it at all, and therefore they achieve success by relying more on effectual rather than on casual logic, although this should be proved by empirical studies. Meanwhile this point can be supported by the findings of several other studies, for example Amit, et al. (1993) found that entrepreneurs try to increase their profits in uncertain environments by being innovative, or Uz Kurt, et al. (2012) found that there's a positive relationship between market and technological turbulences and business innovativeness, where an increase in these turbulences will increase innovativeness. Organisations should therefore support innovativeness when facing turbulent environments in order to improve performance (Tsai & Yang, 2013) . Moreover McKelvie, et al., (2011) found that the type of uncertainty experienced influences the willingness to engage in entrepreneurial action differently and that the entrepreneur's expertise serve to moderate the

relationship between uncertainty and action in counter-intuitive ways. Sawyerr & Peterson (2003) proved that the increased perceived uncertainty leads to a better firm performance through the increased internal networking, as they found that the higher perceived uncertainty leads to a more frequent internal networking. In the same vein Alvarez and Barney, (2005) found that high environmental uncertainty might create an opening for entrepreneurs to identify market opportunities that have gone unrecognized by potential competitors and thus creating a vehicle for entrepreneurial entry. Moreover if high uncertainty leads to reduced business activity, it may also increase unemployment, leading to more entrepreneurial 'push' — termed the refugee effect' by Thurik, et al. (2008).

In this study we would like to concentrate on two main questions. First, is to determine the relationship between environmental uncertainty and the (relative) size of the MSME sector, and the second is to study whether there is a difference in this relationship between transition economies and other developed economies. There is a need in the field to study this relationship in more depth since the findings on the effects of the uncertainty on the share of MSMEs is still inconclusive and mixed. The studies that focused on the effect of uncertainty or the effect of the environment attempted to compare all the countries at once without taking into account any specific characteristics of regions, countries or even groups of countries. This has led to ignore the fact that the MSME sector in transition economies is still new and therefore they have less share by MSMEs comparing to the one in developed economies and not necessarily due to the impact of environment. Hence there was no study conducted to compare the transition economies and developed economies in terms of how their uncertain environments impact on the increasing number of MSMEs. This can be seen in the Table 1, where the ranking demonstrates the pace of the growth of MSME sector in each country during the period from 2000 to 2008 year. (The panel data on the country information of MSME sector size was taken from IFC's web page, and the balanced information was only available for this period of time). Looking at the table, the overall picture gets even more confusing, because most of the growth has occurred in the countries with transition economies of the Former Soviet Union which are usually considered as highly uncertain environments for doing business. See Appendix 1, for the table with growth rate of MSME sector in countries for the period 2000-2008.

Based on the growth indicators in many countries with transition economies we argue that the effect of the uncertainty in the business environment which comes from institutional vulnerability is not significant and that even in highly uncertain transition process the MSME sector size will still grow. The transition economies have recently allowed the existence of private sector therefore there is a huge demand for yet not existing products and services. The markets are not as rich as ones in the developed economies, and in order to enjoy the windows of opportunities there should be a strong continuous growth in the size of the private sector and mainly of MSME sector. Therefore the effects of institutional uncertainty are overcome by the market demands.

To our knowledge only three studies were conducted that focused specifically on how the business environment impacts on the size of MSME sector .

First is the study conducted by Rocha (2012) where the authors aimed to determine if having a larger SME sector is the result of competitive or constraining business environments measured by entry costs, easiness of access to finance, levels of business sophistication and innovation and the level of exit costs. The dependent variables used in his study are the number of small and medium enterprises in each economy (SME, and MSME includes microenterprises), the share of the MSME employment in the total labor force (SMEemploy), and the share of the industry and services sector (non agricultural sector) employment in the total labor force. The number of his analyzed countries varied depending on the utilized dependent variable, for example, for the dependent variable SME (the number of small and medium enterprises in the economy of each economy) the sample included 99 countries (31 "High income: OECD", 8 "High income: non OECD", 30 "Upper middle income", 21 "Lower middle income", and 9 "Low income").

For the case of SMEemploy (the share of the MSME sector in the total labor force.), the sample included 104 countries (31 "High income: OECD", 11 "High income: nonOECD", 31 "Upper middle income", 22 "Lower middle income", and 9 "Low income"). And for the dependent variable Employment In Service (the percentage o total employment in the industry and services sector.) included 105 countries with a similar distribution by income level as in the previous cases. As a control variable Gross Domestic Product per capita was utilized. The data for the environmental indicators was obtained from the International

Finance Corporation's Doing Business Ranking, and the data on the size of MSME sector was obtained from the database also produced by International Finance Corporation. Rocha (2012) applied an Ordinary Least Squares estimation of a multiple linear regression model using cross-country data, attempted to assess how much of the cross-country variation in the contribution to employment and the size of the SME sector in the economy can be explained by cross - country variation in business environment regulations. Their results showed that low entry costs, the effectiveness of credit information sharing and the sophistication and innovation of the business environment predict a larger SME sector. The evidence suggesting that a larger SME sector may be associated with higher exit costs or inefficient legal systems appeared weak.

Although the author grouped the countries based on their income level, as it is done by International Finance Corporation: High income, Uppermiddle income, Lower middle income, Low income in his description of a sample data, this grouping was not considered in the analysis process, since he used OLS with multiple linear regression and individual regressions for each dependent variable while ignoring which group the countries were from. Such generalisation in the regression analysis ignores the individual effects of other factors related to each specific group. For example in some countries with transition economy the sector of MSME has come to the existence recently comparing to the ones in the developed economies. This fact can be the reason for the relatively small share of MSME sector in those countries comparing to others. At the same time the business environment in transition countries is mainly considered as uncertain environments due to the institutional building process. Therefore when all the countries compared as if they are equal in OLS regressions the results may come out as the share of MSMEs decrease while the environment conditions worsen. However this might not be the fact, based on our Table 1 growth rankings in MSME share by countries.

The second is the study conducted by West & Drnevich (2010) where authors, in their unpublished study, researched the differences in effect of the uncertainty on smaller businesses and younger businesses. They presented a model of environmental uncertainty tied to industry, geographic and macro-level effects. It was hypothesized a moderating effect of uncertainty upon both new and small business performance. They utilized data from the

National Small Business Poll on Innovation from the National Federation of Independent Business (NFIB), USA. The NFIB data set consisted of a validated survey instrument and interviews that were administered by the Gallup Organization to a random sample of firms between October 20th and December 2nd, 2005. Authors utilized a measure of industry dynamism to capture the degree of uncertainty and change found in a particular industry (Dess & Beard 1984). They propose that firms in dynamic industries are more likely to innovate in comparison to firms in more stable industries. They measured industry dynamism as the extent to which technology is changing in the firm's industry. The authors have utilized Ordinary Least Squares (OLS) in SPSS to test their model and hypotheses. They found dual effects of uncertainty stating on the one hand, environmental uncertainty may lower the average performance of firms as they defer investment waiting for resolution of the uncertainty, or make more mistakes due to imperfect information. On the other hand — as noted by McMullen & Shepherd (2006) among others — uncertainty may also increase the performance differential between firms. The authors interpretation of the obtained results is that younger firms had their performance enhanced more by low uncertainty than did higher firms and there were no significant effects for the interaction effect of firm size and uncertainty.

The third study by Ghosal & Ye (2015) examined the impact of uncertainty on employment dynamics. The paper provides the results on the differential effects of uncertainty on employment growth, and how this effect varies across firm size classes. For the data about businesses with different sizes the authors used the database from U.S. Small Business Administration, which contains annual data on various economic and business variables by 'size of businesses' typically over the period 1988 to 2011. The data in this database, as stated by authors, is not at the firm-or-industry level, but aggregated and then presented by alternative size classes. For example, the data on employment are available as an aggregated annual time-series for all businesses in the U.S. over 1988-2011. The aggregate employment data are then presented by firm size classes, where, based on standard U.S. Census classifications, size is based on the number of employees. Ghosal & Ye (2015) state that for their study, the SBA data allow them to examine how uncertainty may affect employment and by different firm-size classes. From the SBA database they used annual data on employment by the size of businesses.

Moreover, they used several U.S. macroeconomic data series to assess the level of uncertainty, such as data on real GDP and GDP implicit price deflator taken from the Federal Reserve Economic Data. The data on S&P 500 stock price index taken from Yahoo Finance. And data on fuel price index taken from the U.S. Bureau of Labor Statistics (BLS); the fuel price index contained information on a broad range of the most commonly used fuels by producers, such as gasoline, electricity, natural gas, heating oil, among others. The authors have used the following size classifications to examine the potential smaller versus larger business effects:

1. 'All' businesses;
2. 'Large' businesses – these are businesses with ≥ 500 employees;
3. 'Small' businesses – these are businesses with < 500 employees; and
4. 'Smaller' businesses – these are businesses with < 20 employees.

They explored alternative measures of uncertainty using macroeconomic indicators. Some of their measures were designed to capture overall uncertainty about macroeconomic conditions, whereas other measures were designed to capture uncertainty arising from the cost side. The specific variables they used to construct the measures of uncertainty include Real GDP growth, Inflation rate, Stock prices, Real fuel price growth. They state that their findings on the differential effects of uncertainty on the employment dynamics of the smaller versus larger businesses are robust across alternative procedures for constructing the measures of uncertainty (survey of professional forecasters versus forecasting regression based methods), and alternative variables to measure uncertainty about (GDP, industrial production, inflation, S&P500 and fuel prices). The smaller firms are the ones most likely to be adversely affected by uncertainty due to their greater likelihood of being financing constrained.

The last two papers have got inconsistent results, while West & Drnevlch (2010) found that there were no significant effects for the interaction effect of firm size and uncertainty, Ghosal & Ye (2015) confirmed that the smaller firms are the ones most likely to be adversely affected by uncertainty due to their greater likelihood of being financing constrained.

Although there are a huge number of studies dedicated on the study of uncertainty, on its measurement and its effects, there are still many opportunities for further research in this area. While acknowledging that to the success of MSMEs and therefore to their overall sector size may effect many other factors such as, internal factors of enterprises (human capital, number of employees, exporting, network, perception of uncertainties etc.) and external ones such as competition, we study the effect of uncertainties since uncertainty effects on each of the counted internal factor. Our aim is to concentrate on the comparison of the effect of environmental uncertainty on the sector size of micro, small, medium sized enterprises (MSME). There will be several differences of our study from the existing studies.

First is, we are going to see how the uncertainty impacts on the size of MSME sector in transition vs. developed economies. There is a general tendency of views that the uncertain environments effect negatively to MSME sector, and that transition economies have mainly uncertain business environments. Does it mean that the environmental uncertainty in transition economies even more strongly and negatively effects on the size of a sector or is it not always true? Based on the analysis of the literature about uncertainties in the countries with transition economy in our first chapter, the uncertainty pushes entrepreneurs change the strategy. However, the impact of the uncertainty on the size of MSMEs in transition vs. developed economies is an unanswered question.

Second, we are going to adapt the measure of uncertainty created by Susjan & Redek (2008) which was named by these authors as Transition Specific Uncertainty. The expansive literature reveals a wide range of variables and methods to measure uncertainty. However, in order to capture the whole surrounding institutional framework of transition economies the Transition Specific Uncertainty measurement was selected. A detailed description of a measurement is given in the methodology section of this paper.

Third, our aim is to utilise a panel data with 52 countries with information about the size of MSME sector measured by the share of employment by MSMEs in total employment of private sector (the data from International Finance Corporation). While doing so we would like to stress that it is more correct to utilise a method for analysis which would take into consideration unobserved differences of individual countries and group of countries, since the

effect of uncertainty could not be the unique factor that might effect on the MSME sector size. Therefore using OLS models which compare all the countries at once is not considered as the best approach. We utilised a Mixed effects regression which was found as a more sophisticated approach that can incorporate individual/group characteristics in a single model, which simultaneously estimates individual/group curves and a sample average curve (Goldstein, 2010) while conventional general regression provides a single equation or growth curve for an entire sample and does not consider differences in change between individuals or groups. A detailed description of this model is given in the methodology and results sections.

2.3 Methodology

In order to see the relationship between the environmental uncertainty and the size of SME sector it was necessary to compare several countries, especially the transition economies with more developed or mostly developed economies. Several stages of the data preparation and analysis have been used.

The first stage was the adoption of a measurement of environmental uncertainty. To capture the changes in the levels of transition-specific uncertainty, Susjan & Redek (2008) have designed the uncertainty index, based on a weighted selection of Heritage Foundation and Freedom House data. Stated by Susjan & Redek (2008) the structure of Heritage Foundation and Freedom House Indices is such that their components efficiently cover a broad range of institutional features of economies. According to these authors the transition from socialism is a unique process that has not been experienced before. It is not only that the market process itself is fundamentally uncertain, as discussed earlier in the literature review section, but also the whole surrounding institutional framework is shattered, which additionally affects the procedures of economic decision-making.

Transition-specific uncertainty stems from three main sources: legacies of the socialist system, political and social instability, institutional and systemic transformation. We have adapted this Uncertainty index taking into consideration specific factors related to Former

Soviet transition economies and specifically Central Asian countries. For example, the government intervention and corruption factors in these countries are still very high therefore the weight for these components given in our index is highest due to its impact on everyday activities of entrepreneurs. On the other hand a measurement of the labour regulation is not included since this aspect is under revision by the International Organization (e.g. the issue of the absence of minimum wages in some high performing countries). Figure 1 presents the composition of Uncertainty index, and the following Table 1 presents the weightings for each component.

Figure 1: The Components of a Transition Specific Uncertainty

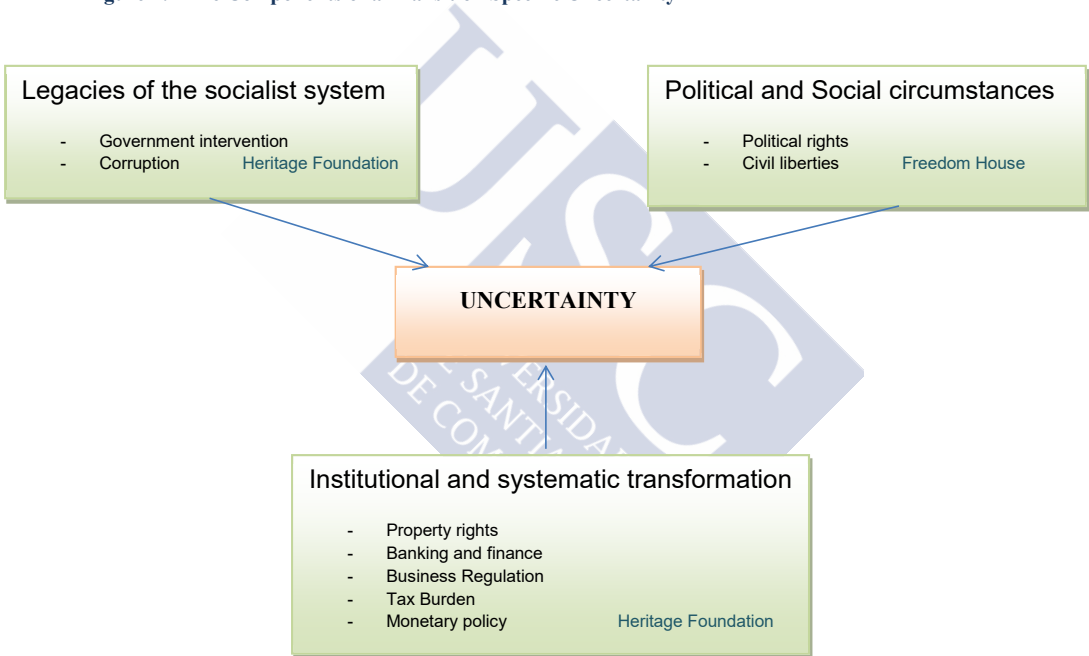


Table 1: Components of the Index of Uncertainty and Respective Weights

Main sources of uncertainty	Indices used to measure source of uncertainty	Source	Weight	Cummulative weight (Sum=100%)
Legacies of the socialist system	Government intervention	Heritage F.	0.15	0.30
	Corruption	Heritage F.	0.15	
Political and social Circumstances	Political rights	Freedom House	0.5	0.10
	Civil liberties	Freedom House	0.5	
Institutional and systemic Transformation	Property rights	Heritage F.	0.10	0.60
	Banking and finance	Heritage F.	0.10	
	Business Regulation (which includes entry barriers, tax system)	Heritage F.	0.10	
		Heritage F.	0.10	
	Monetary policy (control of inflation, exchange rate)	Heritage F.	0.10	
		Heritage F.	0.10	
	Fiscal problems (tax burden)			

See the Table 3 in the appendix presented later in this chapter to learn about the components within the Index of Uncertainty, where it is described what government policy activities are involved in each referred component. Additionally see the Table 4 of the appendix 1 to see the level of correlations between the components of an index. Table 5 & 6 of the appendix 1 show the ranking of all the countries in terms of their level of uncertainty. Although the weightings of each component within an index have been adapted, playing with weightings by giving equal weightings for all the components also has generated similar rankings among the countries, see the Table 5 of the appendix 1. Therefore, while we give more weighting to some components that we consider more prevalent in the transition economies, we do not change the ranking sequence to a great level and at the same time we are able to stress the most problematic areas in the institutional environment of transition economies.

The second stage was finding and preparing a panel of aggregate data with a data of micro, small and medium enterprises in the economy of each country taken from International Finance Corporation (IFC) of a World Bank Group. The actual database contained a highly unbalanced data for different countries. In order to have more robust results the data for each country was strongly balanced to nine-year period from 2000 to 2008. For the purpose of our

study this period was sufficient, as the transition economies from the former Soviet bloc have started their transition process far enough back in 1991, while other transition economies in Eastern Europe have started their transition more earlier, and the period from 2000 to 2008 is a good time period to see the change in the growth of SME sector and the level of uncertainty in those countries since till 2000 countries have already established and experienced the relevant policies to support and manage a business sector. As a measurement for the size of SME sector was taken the Share of Employment created by MSMEs – Micro, Small, Medium sized businesses. One limitation of this sample is that the data is available only till 2008 year, while it would be more valuable to have a larger and more recent period of time.

The third stage was to categorise the countries into several groups. The sample size consists of 53 countries that have information about their size of MSME sector and their business environment indicators for the period from 2000 to 2008 period. In the original database the countries are grouped based on their income level, however for the purpose of our work we categorised countries in terms of their type of economy, transition vs. not transition vs. what type of transition. There are several reasons for such grouping. First of all, the aim of this paper is to assess the impact of environmental uncertainty, which involves elements of a transition specific uncertainty on the size of MSME sector. For this we need to consider the types of economies in comparison. Second reason is that the countries of Former Soviet union, for example, have their common characteristics and they are not comparable with Eastern European countries that are also in transition process, or the countries of Central Asia have their own common factors that are similar to each other but not to other countries. In the same way, Eastern European Countries have their own similar attributes, such as being in European zone and having the transition process started in the same period. Moreover, there are many countries within the former Soviet Union and there are some differences within them that have to be considered as well. Russia was the ruler of the rest of former Soviet Union. Therefore, Russia has already had its infrastructure, financial, natural, intellectual resources from the beginning of the transition process. Therefore Russia could be considered in a similar way as other countries in transition such as China for example. In contrary, other countries of the former Soviet Union were all dependent on Russia or any other neighbouring countries for those resources. None of these countries were self sufficient and therefore they had big troubles in the initial years after the collapse of the union until they could provide

themselves with first necessary products. Additionally, Central Asia within the former Soviet Union has many common characteristics that are not shared with the rest of countries in the former Soviet Union, such as location in Asia, having the same cultural roots and similar language. As stated in Doing Business 2017: “*Countries of Central Asia share more than just geography; they also share a similar legacy and, more importantly, a common vision for the future*”. These countries also share similar weather climates and all rely on agricultural sectors for fruits, vegetables, wheat and in some of them on cotton. And because of this the current institutional environments of these countries are also similar. Therefore we insist on having Central Asian countries as a separate group within transition economies. Within Central Asia Turkmenistan has the closest economy and therefore in many databases the data for this country is not available as happened in our case. Hence Turkmenistan is omitted in our Central Asian group. Generally we have 6 groups of countries in our panel data. See the Table 2 for groupings:

Table 2: Country groupings

Developed economy	Transition FSUCA - Former Soviet Union Asia and Caucasus (4 countries)	Transition FSU - Former Soviet Union (8 countries)	Transition EEA - Eastern European Countries (7 countries)	Other economy (4 countries)	Transition Emerging economy (7 countries)
(22 countries)					
Australia	Kazakhstan	Armenia	Albania	BosniaandHerzegovina	Argentina
Austria	KyrgyzRepublic	Azerbaijan	Bulgaria	China	Brazil
Canada	Tajikistan	Belarus	CzechRepublic	HongKongSAR, China	Algeria
Switzerland	Uzbekistan	Estonia	Finland	Croatia	Indonesia
Germany		Georgia	Hungary	RussianFederation	Jordan
Denmark		Lithuania	Poland		Philippines
Spain		Latvia	SlovakRepublic		Turkey
France		Moldova			
UnitedKingdom		Ukraine			
Greece					
Ireland					
Iceland					
Italy					
Japan					
Korea,Rep					
Malta					
Norway					
NewZealand					
Singapore					
Portugal					
Sweden					
UnitedStates					

Grouping based on the transition vs not transition type of economy was proved better than the grouping based on the income level with its better R2 and coefficient significance levels in the results of the panel data OLC, LCDV, Mixed effect models.

The forth stage was a review of a literature. This is to find other factors contributing to the size of MSMEs apart from uncertainty level, and to keep control of these factors. The Table 2 in the appendix 1 lists the correlated variables with the size of MSME sector based on the findings of previous studies.

We selected as a correlated variable GDP Per Capita (current \$) on the basis of the study of Ayyagari, et al., (2007). After the inclusion of the variable GDP Per Capital other variables included in the table were not used due to multicollinearity with either GDP Per Capital or with the components of the Index of Uncertainty.

Table 3: Correlation between MSME and GDPPerCapital in \$

	MSMEem-I	GDPPer-S
MSMEem-I	1.0000	
GDPPer-S	0.2393	1.0000

In the fifth stage the model was estimated using Ordinary Least Square (OLS) method separately for each of six different groups of countries: developed, transition FSU, transition FSUCA, transition EEA, emerging, transition as well as using Least Square Dummy Variable (LCDV) method for all the countries in one model. While analysing the results from OLS and LCDV models two assumptions have been made. First is that the categorising countries based on economy types was a good decision, because this has shown how different is the role of uncertainty in these regions. Second, is that these different results for groups revealed that in order to work with the entire database which consists of multiple levels the Mixed Effect model is the most suitable strategy.

In the sixth stage we conducted Fixed effects and Random effects analysis and tested using Hausman Test. Hausman Test for the models with control variables approved the suitability of Random effects model, while Hausman Test for the models without control variables favoured for Fixed effects model. The process is explained in the section below and

underlining reasons for not selecting neither Fixed effects model nor Random effects model are presented.

In the seventh stage we performed a Mixed effects model using a two level model. Mixed effects regression is a more sophisticated approach that can incorporate individual growth characteristics in a single model, which simultaneously estimates individual country curves and a sample average curve (Goldstein, 2010). Mixed effects consist of fixed effects (i.e., average parameter values for the entire sample) and also *random effects* that are different for each group or even each country. The mixed-effects model is usually used when data is clustered in some manner, as in this paper since there are developed economies, emerging economies and transition economies. Moreover transition economies are clustered within different regions based on their recent histories.

Variables

Table 3 of the appendix 1 provides a complete description of all the variables utilized in this study. The dependent variable ‘MSMEemploymenttotal’ is the share of the MSME employment in the total labour force in private sector (MSME includes microenterprises).

The independent variables are Index of Uncertainty - UnCertaintyIndex, and this variable includes in itself component variables: Property rights, Corruption, Taxes, The intervention of a government, The regulation of a business, Monetary policies, Availability of finance, Civil liberties, Political rights.

The Index of Uncertainty can also be called as the Index of Certainty, because in our data, the higher value of the index represents the more stable and certain environment. In other words the higher indicator means a lower uncertainty. All components of the index are also calculated in the same manner, the higher indicator represents the better environment.

Gross Domestic Product per capita is utilized as a control variable (GDPPerCapitalcurrentUS). The types of economies are dummy variables employed in LCDV (economytype1 economytype2 economytype3 economytype4 economytype5 economytype6) and in a Mixed Effect model (countrytype).

Table 4: Summary statistics of the utilized database

Variable	Observations	Mean	Standard Deviation	Minimum	Maximum
MSMEemploy-l	477	45.18181	19.39644	2	99.4
UnCertaint-x	477	64.60246	11.87863	32.22	92.76786
GDPPerCapi-S	477	17565.62	17733.67	139.1	87646.3
PropertyR-10	477	60.38784	25.29047	10	90
Corruption-1	477	52.96017	28.01576	10	240
TaxBurden-10	477	69.06331	14.42354	29.8	94.194.1
Government-r	477	55.94927	24.1322	0	94.1
BusinessRe-o	477	70.19203	14.97094	39.2	100
MonetaryP-10	477	75.6239	14.55262	0	100
Bankingand-o	477	63.29057	21.14646	10	91.6
Calculated-s	477	77.26864	23.96264	14.28571	100
Calculated-t	477	77.71788	29.35267	14.28571	100

The choice of the fifty three countries under investigation depends on the availability of data on MSME sector size, political and civil freedom for each country in both databases (International Finance Corporation (IFC) and Freedom House).

Table 4 of the appendix 1 presents correlations of all the variables including the components of an Index of Uncertainty. GDPpc is highly correlated with almost all the variables. It is very interesting to notice that two components of the index Tax Burden and Government Regulation are negatively correlated with the size of MSME sector, GDP per capita and other components. This means that even in the countries with high MSME sector and high GDP per capital there is a high tax burden and excessive government regulations.

A significant degree of correlation among most of the independent variables does not create a problem, because we are dealing with one single composite index with all these components combined.

As stated earlier, first the relationship between uncertainty level and the size of MSME sector is studied in each identified group, in order to see how the role of uncertainty changes based on the type of economy. An important aspect to analyse before proceeding with the estimation and interpretation is to check for the presence of heteroscedasticity. A Breusch-Pagan test for Heteroscedasticity was conducted and consequently the results provided evidence against heteroskedasticity in the model that are separate for each group. This means that the reported standard errors are reliable for OLS model for each group of economies. The econometric model for the individual regressions is the following:

$$MSME = \alpha_0 + \alpha_1 UnCertaint_i + \alpha_2 GDPPerCapi + u$$

Where $UnCertaint_i$ represent in turn the uncertainty level for each of the six economies used in this paper to describe the business environment.

However LCDV model with all the groups included has a heteroscedasticity problem and the results of Breusch-Pagan test favoured a random effect models to OLS or LCDV models when analysing all the countries and economies in one model. The detailed presentation of the results is given in the next section.

The paper will proceed to apply a linear regression by OLS for each group of countries separately, then the mixed effect model will be applied for all the countries analysed in one model. The results will be presented with Likelihood Ratio Test (LR Test) estimations that provide evidence towards a mixed effect model than OLS model.

2.4 Results and Analysis

Following to identification of the index of uncertainty the first intention was to see where each country ranks according to its average level of uncertainty and see where each country ranks in average growth intensity of its MSME sector. As stated in the methodology part, in order to avoid the big changes in data by relying on our weightings for each component of the index of uncertainty, we demonstrate in the Table 5 of the appendix 1 the fact that the rankings by countries do not change too much when we give equal weightings for each component.

It is known that the more developed countries have bigger share of MSME sector due to the longer period of the development of this sector. However it is useful to see where each country ranks in terms of its speed of growth of MSME sector.

It should be noted that the actual share of MSMEs in employment is high in developed economies and the above indicators are of the growth rates in MSME employment.

The higher rank in the uncertainty index means a better environment with lower level of uncertainty. According to the above table it is seen that mainly developed economies rank high in terms of their business environment and transition economies especially those from former Soviet bloc rank the lowest. This demonstrates that the environment in transition economies is highly uncertain and lack of business freedom especially those countries from the former Soviet Union. On the other hand, at the right sight of the table, the growth speed of MSME sector is high in the transition economies especially in those that were ranked as highly uncertain environments. The developed economies have suffered a downturn and instead of the increase the MSME sector size it decreased dramatically in the period from 2000-2008 while having a better environment for doing business.

From this it can be assumed that the level of uncertainty does not always determine the growth in number and size of the small and medium enterprises. While improvements in business environment encourage growth by MSMEs, it seems that still high level of environmental uncertainty does not stop entrepreneurs from starting and growing businesses. In case of Azerbaijan, MSME sector size grew 1000 % in eight-year period. The country has been listed as the top global reformer by the IFC/World Bank's 2009 Doing Business report, with improvements in seven out of ten indicators of business environment reform. Azerbaijan moved far up the global rankings, from 97th place to 33rd, in the overall ease of doing business. After the recognition of importance of non-oil sector the country did best in order to increase the share of MSMEs which is seen from its growth rates in the above table. Several political journals issued in Azerbaijan stated that the country realised the importance of MSME sector and therefore concentrated on the increase of its size in the second decade after its independence in 1991.

The results of the empirical analysis are presented below in tables 11 – 14. In the first model individual analysis were performed for different groups of countries: developed, transition EEA, transition FSU, transition FSUCA, transition and emerging. The impact of the uncertainty on the size of MSME sector has been presented by the separate regressions for each group. Moreover in order to see the role of the each component within the index of uncertainty, we ran regression with all the components stated in one model.

Table 5: The effects of Uncertainty on the size of MSME sector in different groups of countries.

Variable	Developed economies	Transition economies in EEA	Transition economies in FSU	Transition economies in FSUCA	Other transition economies	Emerging economies
Constant	51.90*** (10.14)	67.20*** (15.79)	-27.93*** (7.059)	135.0*** (20.60)	-1.550 (11.61)	9.336 (33.38)
UnCertain~x	0.172 (0.146)	-0.337 (0.265)	0.859*** (0.129)	-2.167*** (0.432)	1.367*** (0.253)	0.712 (0.557)
GDPPerCapi~S	-0.000313*** (0.0000746)	-0.000182 (0.000174)	0.00138*** (0.000343)	0.00215 (0.00156)	-0.00257*** (0.000405)	-0.00283* (0.00118)
Adjusted R2	0.074	0.083	0.635	0.406	0.466	0.105
Components of the Uncertainty Index:	Developed economies	Transition economies in EEA	Transition economies in FSU	Transition economies in FSUCA	Other transition economies	Emerging economies
Constant	34.94 (20.69)	56.25 (31.19)	-9.049 (12.56)	197.8** (56.37)	21.53 (24.43)	-15.07 (32.94)
PropertyR~10	-0.0273 (0.120)	0.565** (0.174)	0.289 (0.150)	-2.797 (1.688)	-0.0307 (0.208)	0.426 (0.214)
Corruption~1	0.224* (0.0896)	-0.0378 (0.0499)	0.106 (0.186)	-0.0988 (0.280)	1.004** (0.279)	-0.123 (0.371)
TaxBurden~10	0.659*** (0.122)	-0.154 (0.283)	-0.152 (0.156)	1.027*** (0.182)	-0.0707 (0.245)	0.122 (0.352)
Government~r	-0.148 (0.0777)	0.211 (0.171)	-0.108 (0.0925)	-0.523** (0.175)	-0.0626 (0.140)	0.711* (0.293)
BusinessRe~o	-0.160 (0.126)	-0.197 (0.229)	0.126 (0.132)	-0.772* (0.281)	-0.147 (0.321)	-0.552 (0.368)
MonetaryP~10	-0.0632 (0.126)	0.00538 (0.106)	0.0301 (0.0954)	-0.413 (0.222)	0.347* (0.134)	-0.155 (0.189)
Bankingand~o	-0.0806 (0.0684)	-0.140 (0.119)	0.130 (0.0809)	-0.105 (0.102)	0.153 (0.0867)	0.0860 (0.145)
Calculated~s	-0.589** (0.184)	-0.224 (0.280)	0.635** (0.189)	-1.298** (0.411)	0.472 (0.319)	0.430 (0.450)
Calculated~t	0.628*** (0.173)	0.0682 (0.251)	-0.263 (0.135)	-0.0259 (0.564)	-0.437* (0.205)	0.0452 (0.285)
GDPPerCapi~S	-0.000280*** (0.0000824)	-0.000524* (0.000239)	-0.000153 (0.000503)	0.00173* (0.000832)	-0.00318*** (0.000605)	-0.00205 (0.00155)
Adjusted R2	0.230	0.318	0.730	0.862	0.696	0.634
Number of countries	22	7	9	4	5	6
Number of observations	198	63	81	36	45	54

Note: Standard errors in parentheses

* p<0.05, ** p<0.01, *** p<0.001

In the first half of the table 12 the *R*² for the Former Soviet Union countries including for Central Asian countries (FSUCA) and for other transition countries is high (from 0.406 the lowest and 0.635 the highest). The *R*² for developed countries group and Easter European

transition economies is much lower (0.074 and 0.083 respectively). The lower R^2 in those countries might be because of the different rates of growth or even decrease of MSMEs in different countries within the same group, as it is seen that the level of uncertainty is not able to explain very much the size of MSME sector. The R^2 for the model with emerging economies is also not very high (0.105), for the same reason - inconsistency in the impact of uncertainty in countries within the group. This is an expected outcome, since we are predicting that the uncertainty does not have a direct effect on the size of MSME sector.

The coefficient of the variable Uncertainty Index shows a negative sign for the Central Asian countries and the results are statistically significant. This is because the countries in this group are experiencing a rapid growth in the size of MSME sector notwithstanding a high level of uncertainty. It was mentioned above Uncertainty Index measures the level of certainty, the higher rate is the better for the environment. Former Soviet Union countries and other Transition countries have also a high and significant coefficient for the same variable but positive this time. This means the lower uncertainty brings to the bigger size of MSME sector. Developed economies and the economies of Eastern Europe have statistically insignificant results in terms of the effect of uncertainty on MSME sector size. The coefficients of GDP Per Capita are very small meaning its influence is very low. The coefficient of GDP Per Capita in four out of six groups is negative, while in the Former Soviet Union including in the Central Asian countries this effect is positive.

In the second half of the Table 12 the OLS analysis were run with all the components within Uncertainty Index not including the Index itself in order to see a better picture of how each component interacts with a dependent variable. The conventional variables behave very much the same way as the model predicts, since our prediction is that the role of the uncertainty (which includes all its components) is not direct towards the size of an MSME sector. The MSME sector may grow even in highly uncertain environments while it may decrease in size in stable environments. Therefore the estimated coefficients are not always statistically significant. The adjusted R^2 values range from a low of 0.230 to a high of 0.862. These values are acceptable for a cross-sectional study and are comparable to those obtained in other studies. Freedom from taxes has a noticeable positive effect on the size of MSME sector in all groups, freedom from the government intervention is negatively associated with the size of

MSME in Central Asian countries. That is also an expected outcome, since from the literature it is known that in the Central Asian countries and in FSU countries there is a high level of government intervention in doing business. Even so, according to our data the MSME size is increasing steadily in these regions. Equally, the freedom in business regulation, monetary freedom as well as political freedom, all these have negative and significant coefficients in Central Asian countries group. GDP Per Capita, this time, has a negative coefficient in all except in Central Asian countries.

OLS model run separately for each group was checked for Breusch – Pagan Test and the results were against the heteroscedasticity. This means that the reported standard errors are reliable. However when running OLS and LSDV (least square dummy variable) models for all the countries combined in one model Breusch – Pagan Test identified a heteroscedasticity in data. Moreover the results from the individual OLS models, in the above table, for each individual group demonstrates that the effect of the environmental uncertainty is different in each group which requires a different approach in finding a good fitted model that would comprise different values for each group and each country in the entire database. A series of statistical models were applied for the analysis of all the countries in one model. We assessed a Random Effect model and also a Fixed Effect model. Since several authors found the negative effect of uncertainty in the business environment on the size of SME sector intuitively we assume the existence of a fixed effect of our independent variable.

Hausman Test

When doing Fixed effects analysis and Random effects analysis and conducting the Hausman Test, the test rejects the null hypothesis and prefer Fixed effects analysis. As shown below:

. hausman fixed random

```
----- Coefficients -----
      |      (b)      (B)      (b-B)      sqrt(diag(V_b-V_B))
      |      fixed      random      Difference      S.E.
-----+-----
UnCertaint~x |      .0340733      .2472507      -.2131774      .0529989
GDPPerCapi~S |      -.0004555      -.0003304      -.0001251      .0000231
-----+-----

      b = consistent under Ho and Ha; obtained from xtreg
      B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

      chi2(2) = (b-B)'[(V_b-V_B)^(-1)](b-B)
              =          31.38
      Prob>chi2 =          0.0000
```

In this case, we have to select a Fixed Effects analysis. However the results of Fixed Effects analysis show very low R^2 value and insignificant coefficient for Uncertainty level variable, indicating that the level of uncertainty is irrelevant. As shown below:

xtreg MSMEemploymenttotal UnCertaintyIndex GDPPERCapitalcurrentUS, fe

```

Fixed-effects (within) regression      Number of obs   =       477
Group variable: countrynum~s          Number of groups =       53

R-sq:  within  = 0.0919                Obs per group: min =        9
      between  = 0.1183                avg   =       9.0
      overall  = 0.0535                max   =        9

                                         F(2,422)        =       21.35
corr(u_i, Xb)  = -0.5928              Prob > F         =       0.0000
  
```

```

-----+-----
MSMEemploymenttotal |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----+-----
UnCertaintyIndex |   .0340733   .1245047     0.27   0.784    - .2106533   .2787998
GDPPERCapitalcurrentUS | -.0004555   .0000709    -6.42   0.000    - .0005949   -.0003161
      _cons |   50.98119   7.872946     6.48   0.000     35.50612   66.45626
-----+-----

sigma_u | 20.920769
sigma_e | 9.3179253
rho | .83446454 (fraction of variance due to u_i)
-----+-----

F test that all u_i=0:      F(52, 422) =    27.61          Prob > F = 0.0000
  
```

We could accept these results and state that uncertainty is irrelevant, however, here we are ignoring different groups of countries with different economies, and we are comparing all of them as if they are equal. Moreover the low R^2 represents low validity of these results.

In the next analysis, we added control variables that represent different groups of countries as we categorised them previously. When we did Fixed effects and Random effects analysis and

conducted Hausman test, the results showed that a Random Effects model is more suitable. The null hypothesis in Hausman Test was not rejected as shown below:

Hausman Test

. hausman fixed random

```
----- Coefficients -----
      |      (b)      (B)      (b-B)      sqrt(diag(V_b-V_B))
      |      fixed      random      Difference      S.E.
-----+-----
UnCertaint~x |      .0340733      .1175922      -.0835189      .0539872
GDPPerCapi~S |      -.0004555      -.000444      -.0000115      .0000193
-----+-----

      b = consistent under Ho and Ha; obtained from xtreg
      B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

      chi2(2) = (b-B)'[(V_b-V_B)^(-1)](b-B)
              =          2.82
      Prob>chi2 =          0.2443
```

If we run Random Effects analysis we have the following results:

Random Effects Analysis

```
. xtreg MSMEemploymenttotal UnCertaintyIndex GDPPerCapitalcurrentUS economytype2 economytype3
economytype4 economytype5 economytype6, re
```

```
Random-effects GLS regression              Number of obs      =          477
```

```
Group variable: countrynum~s              Number of groups     =           53
```

```
R-sq:  within = 0.0908                      Obs per group: min =           9
```

```
      between = 0.3559                      avg =           9.0
```

```
      overall = 0.2960                      max =           9
```

```
Wald chi2(7) = 68.03
```

```
corr(u_i, X) = 0 (assumed)                  Prob > chi2          = 0.0000
```

MSMEemploymenttotal	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
UnCertaintyIndex	.1175922	.1121909	1.05	0.295	-.1022978	.3374823
GDPPerCapitalcurrentUS	-.000444	.0000682	-6.51	0.000	-.0005778	-.0003103
economytype2	-23.60566	7.069682	-3.34	0.001	-37.46198	-9.749333
economytype3	-9.176794	7.484639	-1.23	0.220	-23.84642	5.492828
economytype4	-19.06885	6.493372	-2.94	0.003	-31.79563	-6.342073
economytype5	-36.89748	6.154118	-6.00	0.000	-48.95933	-24.83563
economytype6	-34.02406	8.447756	-4.03	0.000	-50.58136	-17.46677
_cons	60.27163	8.505071	7.09	0.000	43.602	76.94126
sigma_u	14.170672					
sigma_e	9.3179253					
rho	.69814265	(fraction of variance due to u_i)				

The results of a Random effects model are more favourable than ones of the previous model. Chi 2 equals to 6 and it is significant. RHO is also high – 0.69. The role of the level of

uncertainty is again not significant. Coefficients of different economies are negatively related to their size of MSME sector. One of the limitations of this model is that, Fixed effects analysis usually omits any type of control variable, but Random effects analysis considers all the control variables. Some researchers may argue that in this case we are comparing two different models in Hausman Test and therefore they might criticise the validity of using Random effects model and its findings.

Therefore, we decided to find a more complex model that accounts for different types of economies. Our panel data consists of multiple levels, all the countries are nested within different groups of economies, and the economies are nested within individual countries. We used a Mixed Effects method, which considers these factors simultaneously. Mixed effects regression was found as a more sophisticated approach that can incorporate individual/group characteristics in a single model, which simultaneously estimates individual/group curves and a sample average curve (Goldstein, 2010) while conventional general regression provides a single equation or growth curve for an entire sample and does not consider differences in change between individuals or groups. In addition, mixed effects models can incorporate exposure variables in the same way conventional regression models can (Goldstein, 2010). Due to the hierarchical nature (countries are nested in groups) of our time-series, cross sectional data the mixed effect was found the most suitable model.

The Mixed effect model is an improvement to the conventional regression model because it allows any or all of the parameters to take different values for each group and each country (Baxter-Jones and Mirwald, 2004). Such parameters are described as having mixed effects because they consist of fixed effects (i.e., average parameter values for the entire sample) and also random effects that are different for each group and each country with the groups. Especially it was seen from the previous table the R^2 is very low for the developed countries in OLS model, which means the uncertainty level information itself does not make much sense in this group, while the R^2 for other groups using the same OLS model is much higher. This demonstrates that the independent variables themselves cannot explain the complex relationship and that some country-specific factors affect to the relationship between the independent and dependent variables. Mixed effect model takes into consideration these types of group specific and country specific factors when regressing.

2.5 Mixed Effect Model

The mixed-effects model is usually used when data are clustered as in our data. Linear mixed models are a generalization of linear models, and are called “mixed”, because the β 's are a mix of fixed parameters and random variables. A fixed coefficient is an unknown constant of nature. A random coefficient is one which varies from sample of groups to sample of groups. The random β are not estimated, though they can be predicted.

The change in the level of uncertainty and its impact on the growth in MSME sector are not fully captured by the fixed effects model, which assumes that the same intercept and slopes characterise all the fifty two countries in this analysis. The usual fixed effects model would look like:

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \epsilon_i$$

However we should acknowledge that we have countries with different economies and if we believe that there are differences between economies, we should include this in the model. Our model is estimated using a random slope framework as explained in equation below:

$$MSME_{ijt} = \beta_0 + \beta_1 Uncert_{ijt} + \beta_2 GDPPerCap_{ijt} + U_{0i} + U_{1i} Uncert_{it} + U_{0j} + U_{2j} Uncert_{jt} + V_t + \epsilon_{ijt}$$

Here, the i represents the subgroup “economytype” and j represents the country within each subgroup. The t represents time measured in years. The β_0 is intercept; β_1 , β_2 are fixed unknowns, U_{0i} is an intercept for the subgroup “economytype” and U_{0j} is an intercept for the country. U_{1i} and U_{2j} are random unknowns. The t represents time measured in years, ϵ_{ijt} is a residual of i, j, t variables.

The results of the likelihood ratio test (LR test) shows that we were able to reject the null hypothesis that means the random intercept model is nested in the random coefficient model (the p -value of the LR test is 0.0000). Therefore we used two level nested model which includes not only random intercept but also random slope model. In a Stata command it looks like:

```
mixed MSMEemploymenttotal UnCertaintyIndex GDDPerCapitalcurrentUS || _all: R.Year || countrytype:
UnCertaintyIndex, cov(uns) || countrynumbers: UnCertaintyIndex, cov(uns)
```

The countries of our data are nested within regions with similar economy types (variable countrytype), and therefore in the model, as it is seen, there are three parts: fixed, a random slope for countrytypes and a random slope for individual countries. There exist random effects not only at the level of economy types but also at the smaller level of each individual country. The following analysis specifies random intercepts and slopes on predictor Uncertainty index for each economy group and for each country.

In general when fitting random slope models, it is advised to use the unstructured covariance than the independent variance, where it can be a correlation between the slopes and the intercepts. The ending of the Stata command with *cov(uns)* specifies the use of unstructured covariance. We applied the LR test to determine the best covariance structure for our model (restricted vs. unstructured). The LR test result shows that Prob > chi2 is less than 0.05 in all specifications which means that the unstructured model is more efficient compared to the restricted model and that random effects are correlated. Hence we apply the unstructured model.

Because we want the year effect to be the same across all countries and group of countries, and not nested within countries and group of countries, we fit the model crossing years with countries and with groups of countries. (in Stata command: *_all: R.Year*; in the equation: V_t).

The likelihood ratio tests (LR test) showed that the full model written above fits significantly better than the model which omits one of the predictors or nested levels.

The positive relationship between the level of the certainty in the environment and the size of MSME was found in several previous papers. However the previous investigations mainly used ordinary least square (OLS), least square dummy variable (LSDV) methods that take into account only the fixed part of our model. The developed countries have a long term established MSME sector and the highest level of certainty in their business environments. On the other hand the transition economy countries have a relatively new MSME sector and very high level of uncertainty. Therefore when all the countries are assessed ignoring their

individual conditions, the results demonstrate that the level of uncertainty determines the size of the MSME sector. Our mixed effects empirical results (see table 7 below) show that the size of the MSME sector is positively affected by the level of environmental certainty with point estimate of 0.335 (table 7). However this result is not statistically significant. GDP Per Capita's effect is negative and near to zero although with statistical significance. This means that the countries with lowering GDP Per Capita are achieving the growth in MSMEs.

In a fixed part of our mixed effect model the positive relationship between the certainty level and MSME sector size is statistically not significant. The random effects estimations by the groups of economies demonstrate that the relationship between the uncertainty and MSME sector size differs in different economies. When considered total both fixed and random effects the Eastern European transition economies have a negative relationship between environmental certainty and the level of MSME sector. Although the environment has been improving dramatically in these countries the share of MSME in the employment somehow decreased during the period from 2000 to 2008. Similarly developed economies have a negative relationship between environmental certainty and the level of MSME sector both in random effects and random + fixed effects. On the other hand, although the environment did not improve very much in the countries of the former Soviet Union the effect of a little improvement was highest on the share of MSME with point estimate 0.80. Similarly the strong positive relationship, for a small amount of improvement in business environment, is seen in Central Asian and in emerging economies with point estimate 0.78 and 0.67 respectively.

The uncertainty level coefficient, based on each country's random effects, (table 8) demonstrates that there is no consistency. Many developed countries experienced decrease in the MSME sector while having the highest ranks in business and political freedom measured by the uncertainty index. That means that environmental uncertainty is not the only determinant of the level of MSME. The high level of uncertainty could not stop the growth in size of MSMEs in many countries as it was expected.

Table 6: The estimation of the effect of the Uncertainty level on the size of MSME sector

MSMEemploy~l

UnCertaint~x	0.335 (0.234)
GDPPERCap~S	-0.000406*** (0.0000793)
_cons	28.65 (17.45)

t statistics in parentheses * p<0.05, ** p<0.01, *** p<0.001

See the appendix 2 for the full table of the mixed effects estimations.

Table 7: Random deviations and random intercepts by the groups of the countries based on their economy type (dependent variable: The size of MSME sector measured by the share MSME employment in the total employment by private sector).

The type of the country	Random deviations of the Uncertainty index (U_1)	Random + fixed effect of the Uncertainty index (Total effects, random intercept - (β_1, U_1)
1. Developed economies	-.3409831	-.0061368
2. Emerging economies	.3307614	.6656077
3. Transition economies	-.275893	.0589533
4. Transition economies in EEA	-.6278453	-.2929991
5. Transition economies in FSU	.4643709	.7992172
6. Transition economies in FSUCA	.4495892	.7844355

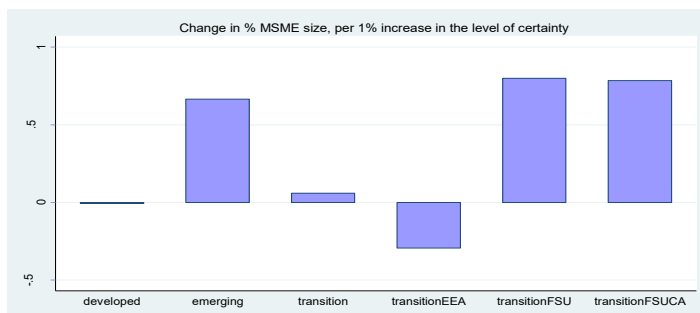
Figure 2: Change in 1% of MSME size, per 1% increase in the level of certainty

Table 8: Random deviations and random intercepts by each country (dependent variable: The size of MSME sector measured by the share MSME employment in the total employment by private sector).

Country	Random deviations of the Uncertainty index (U_2)	Random deviations of the Uncertainty index (U_1)	Random + fixed effect of the Uncertainty index (Total effects, random intercept - $B_1 + U_1 + U_2$)
1. Albania	-.1556078	-.6278453	-.4486068
2. Algeria	-.104609	.3307614	.5609987
3. Armenia	.0208981	.4643709	.8201153
4. Australia	-.1181092	-.3409831	-.1242459
5. Austria	-.0056704	-.3409831	-.0118072
6. Azerbaijan	.0638686	.4643709	.8630859
7. Belarus	-.0399543	.4643709	.7592629
8. Bosnia and Herzegovina	.0448311	-.275893	.1037843
9. Brazil	.0599429	.3307614	.7255506
10. Bulgaria	-.0595791	-.6278453	-.3525782
11. Canada	-.0118278	-.3409831	-.0179646
12. China	.0788324	-.275893	.1377856
13. Croatia	-.0775363	-.275893	-.018583
14. CzechRepublic	.0305447	-.6278453	-.2624543
15. Denmark	.0675021	-.3409831	.0613653
16. Estonia	.0375817	.4643709	.8367988
17. Finland	-.076408	-.6278453	-.3694071
18. France	-.0804084	-.3409831	-.0865452
19. Georgia	-.1783231	.4643709	.6208941
20. Germany	-.1172752	-.3409831	-.123412
21. Greece	-.0343854	-.3409831	-.0405222
22. Hong Kong SAR, China	.0342793	-.275893	.0932325
23. Hungary	.0309217	-.6278453	-.2620774
24. Iceland	.1916202	-.3409831	.1854834
25. Indonesia	.0878256	.3307614	.7534333
26. Ireland	-.0441925	-.3409831	-.0503293
27. Italy	-.0043209	-.3409831	-.0104577
28. Japan	.0872654	-.3409831	.0811286
29. Jordan	-.0439225	.3307614	.6216851
30. Kazakhstan	.0351445	.4495892	.81958
31. Rep. Korea	-.0664791	-.3409831	-.0726159
32. Kyrgyz Republic	-.0441449	.4495892	.7402905
33. Latvia	.0687769	.4643709	.8679941
34. Lithuania	-.1159818	.4643709	.6832353
35. Malta	.0923529	-.3409831	.0862161
36. Moldova	.0109337	.4643709	.8101509
37. New Zealand	.030131	-.3409831	.0239942
38. Norway	.0450733	-.3409831	.0389365
39. Philippines	.0566819	.3307614	.7222896
40. Poland	.0005212	-.6278453	-.2924778
41. Portugal	.026339	-.3409831	.0202022
42. Russian Federation	-.0925915	-.275893	-.0336382
43. Singapore	.0217125	-.3409831	.0155757
44. Slovak Republic	-.0484618	-.6278453	-.3414609
45. Spain	.0160993	-.3409831	.0099625
46. Sweden	-.0140953	-.3409831	-.0202321
47. Switzerland	.2016389	-.3409831	.1955021
48. Tajikistan	.1010257	.4495892	.8854612
49. Turkey	.0351005	.3307614	.7007082
50. Ukraine	.0849074	.4643709	.8841246
51. United Kingdom	-.1181066	-.3409831	-.1242434
52. United States	-.0155707	-.3409831	-.0217075
53. Uzbekistan	.0052093	.4495892	.7896447

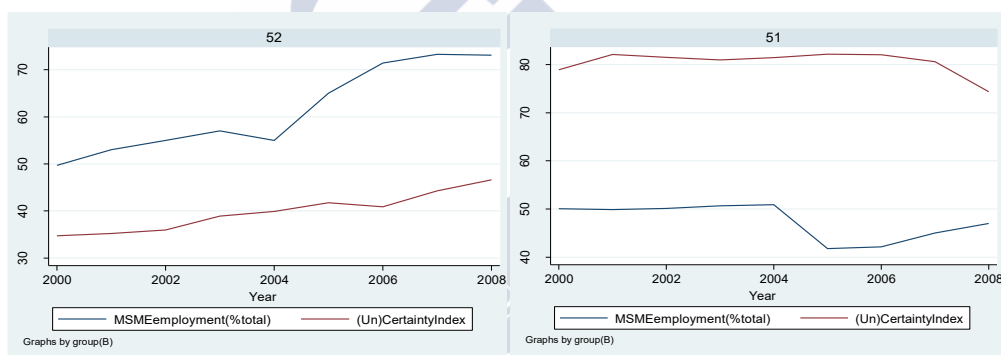
The Uncertainty index for Uzbekistan grew from 34 in 2000 to 46 in 2008. Although 46 is one of the lowest indicators the share of MSMEs for this period have increased by 47%. The

ranking of its business environment within 53 countries in the database is on the 52nd level, which means it is one of the worst environments for the conduct of a business comparing to other countries in the database, while the ranking in terms of the growth in the share by MSMEs stays in a good 10th position in the given period of time. If we look at the United States' case for the comparison, the ranking of its business environment within 53 countries in our database is on the 8th level, which means it is one of the best environments for the conduct of a business. The Uncertainty index for United States indicates on average 80 in the period from 2000 to 2008. Even so, the share of MSME sector decreased by 6% for the given period in our study, perhaps due to some other economic or political factors.(see table 7, 8)

Figure 3: Changes in the environment

Changes in the environment
and MSME share in Uzbekistan

Changes in the environment and MSME share in United
States



The mixed effects analysis revealed for Uzbekistan: a random effect of the country : 0.0052093, a random effect related to a type of economy – 0.4495892, and total random effects + fixed effect = 0.7896447. The positive coefficient demonstrates a positive relationship between the uncertainty level and the share by MSMEs. The same analysis for United States, similar to other many developed economies, showed: a random effect of the country: -0.0155707, a random effect related to a type of economy: -0.3409831, and a total random effects + fixed effect = -0.0217075. The negative coefficient means the negative relationship between the uncertainty index and the share by MSMEs. While the effect of an environment in the first case is very strong, in the second case it is near to zero. While in the

lowest ranked environment the increase of MSMEs share is huge, the same indicator is negative in the highly ranked environment.

2.6 Conclusions and recommendations for future research

In this chapter we studied the effect of environmental uncertainty on the size of MSME sector in a sample of 53 countries. In doing so we considered the type of the economy of each country. We grouped the countries into several types: Central Asian and Caucasian transition economies, European part of the Former Soviet Union transition economies, other transition economies, the countries which fall into class of emerging economies and developed economies. The assessment of a business environment in the transition economies should be interesting due to the most rapid temps of growth of the share of small and medium sized businesses, while these countries rank in the lowest positions in terms of ease of doing business and in indexes of business and political freedom. Notwithstanding a high level of uncertainty this environment could be a good environment to start and run a business. There are several possible reasons for that: there are many unavailable products and services which are necessary for living and therefore big opportunities to run new businesses, the high level of unemployment and therefore increasing self-employment, lower competition from foreign countries due to the import reduction policies therefore easier business running without sophisticated marketing technologies, SME export support programs which include no tax and no obstacle policy for SMEs for their exporting activities as practiced by Uzbekistan, which encourage a growth towards exporting. If it is a good environment to run a business, then does uncertainty positively relate to the increase of the share of small and medium sized businesses sector in these economies? This question was answered in this paper by running a time series cross sectional analysis of fifty two countries using a mixed effects model.

The countries were compared to see the relationship between the environmental uncertainty and the size of SME sector. They were grouped based on their recent economic histories and similarities in institutional conditions. Previous study in the field which studied the relationship or impact of the business environment on the size of small and medium sized businesses sector found that there is a negative effect of uncertain environment on the size of

MSME sector, and that the improvement in the business environment will lead to a greater size of the sector. However, these studies mainly used ordinary least square, or least square dummy variable or other type of regression analysis that assume that the same intercept and slopes characterise all the fifty two countries in the analysis. Although these estimations show the positive relationship between the level of certainty and the size of MSME sector, it is early to conclude that uncertainty prevents the growth of MSMEs.

Countries with developed economies usually have a bigger size of MSME sector because of a long history of their development period of MSME sector. These countries have a good and stable business environment. While MSME sector in transition countries is relatively new, and therefore did not have enough time to reach its potential. However when the growth rates are analysed, the transition countries have the higher rates of growth in MSME sector. Our main contribution in the analysis of the impact of an environment on the size of MSME sector was the use of mixed effects analysis usually used when data is clustered. The Mixed effect model is an improvement to the conventional regression model because it allows any or all of the parameters to take different values for each group and each country (Baxter-Jones & Mirwald, 2004).

Because the mixed effects model include in itself both fixed effects, which is measured by ordinary least square models and also random effects model our results are both confirming and not confirming the results from previous studies. In a fixed part of our mixed effect model the positive relationship between the certainty level and MSME sector size was identified. However this was not statistically significant due to the differences in individual countries and economies. The random effects estimations by the groups of economies and by countries demonstrated that the relationship between the uncertainty and MSME sector size differs in different groups of countries.

Many developed countries experienced decrease in the MSME sector while having the highest ranks in business and political freedom measured by the uncertainty index while the high level of uncertainty could not stop the growth in size of MSMEs in other countries with transition economies. Particularly in the countries with economic transition it can be seen that the growth level of the share by SMEs is faster than the improvement speed of the

environment towards more certain environment. In the countries of the former Soviet Union the effect of a little improvement was highest on the share of MSME with point estimate 0.80. Similarly the strong positive relationship, for a small amount of improvement in business environment, is seen in Central Asian and in other transition countries with point estimate 0.78 and 0.67 respectively.

Based on our previous discussions about the effectual space, we may assume that uncertainty only provoke the aggressiveness of entrepreneurs instead of stopping the entrepreneurship at all, while these assumptions are due to the further investigations. At this time, based on our results we only may conclude that the effect of the environmental uncertainty on the size of MSME sector is not consistent and therefore we may say that the level of uncertainty does not determine the size of MSME sector of the country. This finding is important and the focus in the future should not be on whether the uncertainty effects or not, but what kind of businesses grow better in highly uncertain environments and how environmental uncertainty impacts on the quality and strategies of MSMEs. Additionally, further research should be done to find out what factors give attractive opportunities for entrepreneurs in running a business in a highly uncertain environments of transition economies.

It might be possible that the uncertainty is a driver of entrepreneurship growth. In free and stable environments people prefer finding a stable job with a good salary and not to think about risking and fighting with competitors for customers, since in the developed economies there is a huge competition in all the markets. The future studies might look at the question of uncertainty from a different angle in order to check for the possibility of using the uncertainty as a tool for MSME growth.

2.7 Limitations

One of the limitations of this study is the period analysed in the data which is from 2000 to 2008. It was not possible to find information for the more recent period or for a longer time-period for all the countries available.

The improvement should be done in the components of and Index of Uncertainty by Susjan & Redek (2008). Although the index created by these authors measure a good amount of institutional factors, some more details would add more value. For example, there should be the way to include the component measured by heritage Foundation Trade Freedom. Trade freedom plays an important role in all the commercial relations of MSMEs and big organisations. In some countries such as Uzbekistan the import reduction policies create obstacles in bringing products from outside the country. Organisations that export they products but import some of their raw materials have to wait for unlimited period of time. This creates uncertainty in their processes. Adding this component without adjusting to the index creates unclear regression results, therefore it is advised to think about the ways of adding this component.

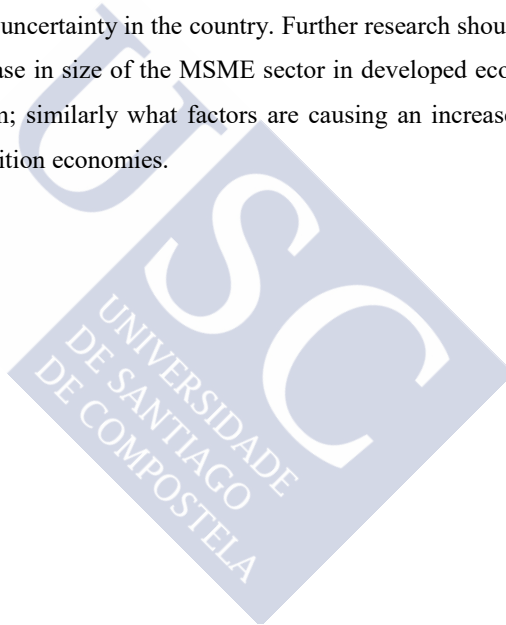
One more limitation is that the environmental uncertainty measured in this study can also be classified as *Macro-environmental uncertainty*: This is uncertainty in the organization's general environment, including political, regulatory, statutory, and economic conditions. This uncertainty has the capacity to reduce an organization's capability for mapping out and pursuing strategic choices (Miller & Friesen 1984). However, based on the theory and research there also can be other types of uncertainties in the business environment which differ from business to business and from industry to industry, such as:

- *Competitive uncertainty*: This is the inability to establish the intensity of competition in the industry in the future, the relative powers of competitors, their future courses of action, and strategies.
- *Market (and demand) uncertainty*: This uncertainty stems from lack of clarity in the dynamics of the market and their effects on the organization's operations, and demand and supply conditions in the industry.
- *Technology uncertainty*: This is uncertainty pertaining to change in the industry's technological resources and capabilities. Technological uncertainty has the potential to undermine an organization's competitive base (Anderson and Tushman 1990).

Uncertainties related to the competitive environment, customer demands and the changes in technologies are high in the developed economies due to high level of competition, rich markets and huge investments on research and innovation in the business environment.

Small and medium sized enterprises in developed countries are challenged by giant companies that invest on research in innovation, marketing and advertising, brand building and gain profits through economies in scale. The customers in these countries have higher demands for the quality products and high range of products and services. Further research in assessing the effects of the uncertainty on the size of MSME sector should also find the ways to create a complex measurement of all these types of uncertainties.

Another limitation could be the fact that we did not study the reasons for the decrease or increase the share of MSMEs within the countries but only analysed the relationship of the growth to the level of uncertainty in the country. Further research should find what factors are causing the decrease in size of the MSME sector in developed economies that have a high business freedom; similarly what factors are causing an increase in the size of the MSME sector in transition economies.



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Appendix

Appendix 1

Table 1: The growth rate of MSME sector in countries for the period 2000-2008

Country	The share of MSME in employment in 2000 (% from total in private sector)	The share of MSME in employment in 2008 (% from total in private sector)	MSME sector growth rate for a period 2000-2008
Developed economy			
Australia	50,00	27,00	-46%
Austria	61,42	44,80	-27%
Canada	60,00	47,00	-22%
Switzerland	66,81	58,86	-12%
Germany	78,43	37,20	-53%
Denmark	38,01	45,10	19%
Spain	58,86	58,00	-1,4%
France	66,85	37,90	-43%
United Kingdom	34,21	35,00	2,3%
Greece	86,69	51,10	-41%
Ireland	69,64	40,50	-42%
Iceland	79,20	72,00	-9%
Italy	69,64	56,80	-18%
Japan	78,00	73,00	-6,41%
Korea,Rep,	45,00	69,00	53%
Malta	58,97	56,57	-4%
Norway	70,77	42,00	-41%
NewZealand	78,40	59,50	-24%
Singapore	52,00	62,00	19%
Portugal	78,88	56,00	-29%
Sweden	39,71	43,00	8,27%
United States	50,08	47,00	-6%
Transition FSUCA - Former Soviet Union Central Asia and Caucasus (4 countries)			
Kazakhstan	10,00	27,00	170%
KyrgyzRepublic	10,70	13,80	29%
Tajikistan	20,00	48,7	143%
Uzbekistan	49,68	73,08	47%

Transition FSU - Former Soviet Union (8 countries)			
Armenia	25,81	42,10	63%
Azerbaijan	2,00	22,00	1000%
Belarus	7,38	13,22	78%
Estonia	54,62	55,00	0,69%
Georgia	15,7	7,2	-54%
Lithuania	67,50	53,00	-21%
Latvia	35,27	48,50	37%
Moldova	10,36	24,39	135%
Ukraine	15,10	30,00	99%
Transition EEA - Eastern European Countries (7 countries)			
Albania	54,23	15,40	-72%
Bulgaria	50,64	47,4	-6,4%
Czech Republic	55,40	51,00	-7,94%
Finland	59,21	34,00	-43%
Hungary	52,30	50,00	-4,39%
Poland	66,00	38,00	-42%
Slovak Republic	45,17	26,00	-42%
Other Transition economy (4 countries)			
Bosnia and Herzegovina	60,86	62,58	2,79%
China	78,00	76,30	-2,1%
Hong Kong SAR, China	63,00	40,00	-37%
Croatia	52,00	26,79	-48%
Russian Federation	29,47	19,93	-32%
Emerging economy (6 countries)			
Brazil	47,86	27,00	-44%
Algeria	10,27	16,85	64%
Indonesia	41,29	48,64	17%
Jordan	34,30	30,00	-13%
Philippines	69,53	61,2	-12%
Turkey	64,31	36,00	-44%
Argentina	13,40	15,2	14%

Table 2: Variables contributing to the size of MSME sector or to the growth of SMEs

Variables	The type of effect	Dependent variable Used Methods	Source
GDP	Positive	This is a control variable as this has been found strongly correlated with SME sector size	Ayyagari, Beck, and Demirgüç-Kunt, 2007; Beck, T., Demirgüç-Kunt, A., Maksimovic, V., (2005)
Higher rates of GDP growth	Positive	This is a control variable as this has been found strongly correlated with SME sector size	Ayyagari, Beck, and Demirgüç-Kunt, 2007; Beck, T., Demirgüç-Kunt, A., Maksimovic, V., (2005)
GDP per capital	Positive	This is a control variable as this has been found strongly correlated with SME sector size	Ayyagari, Beck, and Demirgüç-Kunt, 2007; Beck, T., Demirgüç-Kunt, A., Maksimovic, V., (2005)
GDP per capital growth	Positive	This is a control variable as this has been found strongly correlated with SME sector size	Ayyagari, Beck, and Demirgüç-Kunt, 2007; Beck, T., Demirgüç-Kunt, A., Maksimovic, V., (2005)
Better credit information sharing	Positive	Size of SMEs sector Panel data analysis using regression based ANOVA and OLS	Ayyagari, Beck, and Demirgüç-Kunt, 2007
Lover costs of entry	Positive	Size of SMEs sector Panel data analysis using regression based ANOVA and OLS	Ayyagari, Beck, and Demirgüç-Kunt, 2007
	Positive	Size of SMEs sector Panel data analysis using Multiple linear regression with OLS estimation	Erick Ariel Gonzales Rocha, 2012
The overall business environment measured by the ease of firm entry and exit, sound property rights, and contract enforcement.	Positive	Size of SMEs sector Panel data analysis using regression based ANOVA and OLS	Ayyagari, Beck, and Demirgüç-Kunt, 2007
Countries with higher education and a more developed financial sector	Positive	Size of SMEs sector Panel data analysis using regression based ANOVA and OLS	Ayyagari, Beck, and Demirgüç-Kunt, 2007
Foreign Direct Investment	Positive	Size of SMEs sector Panel data analysis using Multiple linear regression with OLS estimation	Erick Ariel Gonzales Rocha, 2012
Easy access to finance	Positive	Size of SMEs sector Panel data analysis using regression based ANOVA and OLS	Ayyagari, Beck, and Demirgüç-Kunt, 2007
		Size of SMEs sector Panel data analysis using Multiple linear regression with OLS estimation	Erick Ariel Gonzales Rocha, 2012
Greater information sharing	Positive	Size of SMEs sector Panel data analysis using regression based ANOVA and OLS	Ayyagari, Beck, and Demirgüç-Kunt, 2007
Countries with more inflation, more trade, and with more exchange rate distortions	Negative	Size of SMEs sector Panel data analysis using regression based ANOVA and OLS	Ayyagari, Beck, and Demirgüç-Kunt, 2007; Beck, T., Demirgüç-Kunt, A., Maksimovic, V., (2005)
Countries with underdeveloped financial, and legal systems, and higher corruption	Negative	The growth of SMEs Regression analysis	Beck, T., Demirgüç-Kunt, A., Maksimovic, V., (2005)
Stifling regulations that prevent SMEs from growing, such as high exit costs, heavy enforcement of contracts	Positive	Size of SMEs sector Panel data analysis using Multiple linear regression with OLS estimation	Erick Ariel Gonzales Rocha, 2012

Table 3: Description of the variables

Variable name	Description	Source / Observations
countrynum-s	The name of the country	Micro, Small and Medium Enterprise Country Indicators (MSME-CI) provides both the latest global snapshot and historic data back 20 years on the number of MSMEs in 132 world economies. In this study, the latest snapshot (mainly presenting information for the first decade of the century) was utilized. Available at: http://www.ifc.org/ifcext/globalfm.nsf/Content/MSME-CountryIndicators
MSMEemploy-l	Measures the participation of micro, small and medium enterprises in the economy. It is the share of the MSME sector in the total labor force	
UnCertaint-x	The transition-specific uncertainty index based on a weighted selection of Heritage Foundation and Freedom House data. The highest level is stated as 100% certainty level.	Sujan & Redek (2008) <i>Uncertainty and Growth in Transition Economies</i> , Review of Social Economy, Vol, LXVI, No.2
GDPPERcapi-S	GDP per capita is gross domestic product divided by midyear population. Data are in constant US\$. The base year is 2005. The intention is to control for the economic settings of each economy.	World Bank based on World Development Indicators data.
Components of the Uncertainty Index:		
PropertyR-10	The level of the recognition of private property rights and an effective rule of law, an autonomous and accountable judicial system, the enforcement of contracts. The highest rank is 100%.	Heritage Foundation Index of Freedom
Corruption-1	The level of transparency, openness in regulatory procedures and processes. The highest rank is 100%.	Heritage Foundation Index of Freedom
TaxBurden-10	It is a direct measure of the extent to which government permits individuals and businesses to keep and manage their income and wealth for their own benefit and use. It is captured by measuring the overall tax burden from all forms of taxation as a percentage of total GDP. The highest rank is 100%.	Heritage Foundation Index of Freedom
Government-r	The level of government spending through taxes, spends on public goods and others. The highest rank is 100%.	Heritage Foundation Index of Freedom
BusinessRe-o	The level of burdensome and redundant regulations are the most common barriers to the free conduct of entrepreneurial activity. The level of the regulatory burden by creating an unpredictable business environment. The	Heritage Foundation Index of Freedom

	highest rank is 100%.	
MonetaryP-10	The measure of a stability of a currency and market-determined prices. The highest rank is 100%.	Heritage Foundation Index of Freedom
Bankingand-o	The availability of diversified savings, credit, payment, and investment services to individuals. Existence of a prudent and effective regulatory system, through disclosure requirements and independent auditing. The highest rank is 100%.	Heritage Foundation Index of Freedom
Calculated-s Calculated-t	The ratings process is based on a checklist of 10 political rights questions and 15 civil liberties questions. The political rights questions are grouped into three subcategories: Electoral Process, Political Pluralism and Participation, and Functioning of Government. The civil liberties questions are grouped into four subcategories: Freedom of Expression and Belief, Associational and Organizational Rights, Rule of Law, and Personal Autonomy and Individual Rights. The adapted highest rank in our uncertainty index is 100%.	Freedom House Ranking of Civil and Political Freedom Freedom House Ranking of Civil and Political Freedom
Control variables:		
economytype1	A dummy variable for countries with a developed economy	United Nations World Economic Survey and other UN Reports
economytype2	A dummy variable for countries with emerging economy	United Nations World Economic Survey and other UN Reports
economytype3	A dummy variable for other countries with transition economies	United Nations World Economic Survey and other UN Reports
economytype4	A dummy variable for Eastern European countries with a transition economy	United Nations World Economic Survey and other UN Reports
economytype5	A dummy variable for Former Soviet Union countries with a transition economy	United Nations World Economic Survey and other UN Reports
economytype6	A dummy variable for Former Soviet Union Central Asian countries with a transition economy	United Nations World Economic Survey and other UN Reports
Dummy variable for a Mixed Effect model:		
countrytype	A dummy variable for all the above dummies related to different economies	United Nations World Economic Survey and other UN Reports

Table 4: Correlation between variables

	MSMEem~l	UnCert~x	GDPPer~S	Prope~10	Corrup~1	TaxBu~10	Govern~r	Busine~o	Monet~10	Bankin~o	Calcul~s	Calcul~t
MSMEemploy~l	1.0000											
UnCertaint~x	0.3129	1.0000										
GDPPerCapi~S	0.2393	0.6775	1.0000									
PropertyR~10	0.3399	0.8358	0.7780	1.0000								
Corruption~1	0.2825	0.8047	0.7851	0.8286	1.0000							
TaxBurden~10	-0.1676	-0.1084	-0.4729	-0.4462	-0.4446	1.0000						
Government~r	-0.1232	-0.0743	-0.4284	-0.3763	-0.4075	0.7100	1.0000					
BusinessRe~o	0.2199	0.8415	0.7060	0.7956	0.7418	-0.2222	-0.2028	1.0000				
MonetaryP~10	0.2221	0.6161	0.4068	0.4971	0.4555	-0.1578	-0.1578	0.5187	1.0000			
Bankingand~o	0.2171	0.7631	0.4387	0.5497	0.5203	-0.1159	-0.1990	0.5607	0.3876	1.0000		
Calculated~s	0.3226	0.6918	0.6648	0.7307	0.6359	-0.4434	-0.5685	0.5896	0.4750	0.5947	1.0000	
Calculated~t	0.3494	0.5800	0.5437	0.6450	0.5185	-0.4674	-0.5575	0.4909	0.3719	0.5075	0.9321	1.0000

Table 5: The change in weightings to equal components and its comparison with our rankings based on the country's uncertainty level

Ranking	Using	Country	Average (Un)certainty for a period 2000-2008	Ranking based on our given weightings for the Index of Uncertainty	Country	Average (Un)certainty for a period 2000-2008
1	Equally weighted Components of Index of Uncertainty	NewZealand	84	1	HongKongSAR,China	86
2		Australia	83	2	Singapore	84
3		Ireland	83	3	NewZealand	82
4		Switzerland	83	4	Australia	81
5		Canada	82	5	Ireland	81
6		HongKongSAR,China	82	6	Canada	80
7		United States	82	7	Switzerland	80
8		UnitedKingdom	81	8	UnitedStates	80
9		Iceland	80	9	UnitedKingdom	79
10		Estonia	78	10	Iceland	77
11		Singapore	78	11	Estonia	76
12		Denmark	77	12	Denmark	74
13		Finland	77	13	Finland	74
14		Japan	75	14	Japan	72
15		Norway	75	15	Norway	71
16		Austria	74	16	Lithuania	70

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17	Germany	73	17	Spain	70
18	Lithuania	73	18	Austria	69
19	Spain	73	19	Korea,Rep,	69
20	CzechRepublic	72	20	Sweden	69
21	Korea,Rep,	72	21	CzechRepublic	68
22	Malta	72	22	Germany	68
23	Sweden	72	23	Malta	67
24	Latvia	70	24	Latvia	66
25	Portugal	70	25	Portugal	65
26	Hungary	68	26	Armenia	65
27	SlovakRepublic	68	27	SlovakRepublic	64
28	Italy	67	28	Brazil	63
29	France	66	29	Hungary	63
30	Poland	66	30	Jordan	63
31	Brazil	65	31	France	62
32	Greece	64	32	Italy	62
33	Armenia	63	33	Greece	61
34	Bulgaria	63	34	Philippines	61
35	Philippines	63	35	Poland	61
36	Albania	60	36	Albania	60
37	Jordan	60	37	Bulgaria	59
38	Georgia	59	38	Georgia	59
39	Moldova	59	39	Moldova	58
40	Croatia	58	40	China	56
41	Turkey	57	41	Algeria	55
42	Indonesia	56	42	Turkey	55
43	Ukraine	53	43	Croatia	54
44	Algeria	52	44	Indonesia	54
45	KyrgyzRepublic	52	45	Kazakhstan	54
46	Kazakhstan	51	46	KyrgyzRepublic	54
47	Azerbaijan	50	47	Azerbaijan	52
48	China	50	48	Ukraine	51
49	RussianFederation	48	49	RussianFederation	49
50	BosniaandHerzegovina	46	50	Tajikistan	49
51	Tajikistan	46	51	BosniaandHerzegovina	44
52	Belarus	37	52	Uzbekistan	40
53	Uzbekistan	37	53	Belarus	39

Table 6: The ranking based in average uncertainty level and growth level of MSME size.

Rank	Country	Average (Un)certainly for a period 2000-2008	Rank	Country	MSME sector growth rate for a period 2000-2008
1	HongKongSAR,China	86	1	Azerbaijan	1000%
2	Singapore	84	2	Kazakhstan	170%
3	NewZealand	82	3	Tajikistan	143%
4	Australia	81	4	Moldova	135%
5	Ireland	81	5	Ukraine	99%
6	Canada	80	6	Belarus	78%
7	Switzerland	80	7	Algeria	64%
8	UnitedStates	80	8	Armenia	63%
9	UnitedKingdom	79	9	Korea,Rep,	53%
10	Iceland	77	10	Uzbekistan	47%
11	Estonia	76	11	Latvia	37%
12	Denmark	74	12	KyrgyzRepublic	29%
13	Finland	74	13	Denmark	19%
14	Japan	72	14	Singapore	19%
15	Norway	71	15	Indonesia	17%
16	Lithuania	70	16	Sweden	8,27%
17	Spain	70	17	BosniaandHerzegovina	2,79%
18	Austria	69	18	UnitedKingdom	2,3%
19	Korea,Rep,	69	19	Estonia	0,69%
20	Sweden	69	20	Spain	-1,4%
21	CzechRepublic	68	21	China	-2,1%
22	Germany	68	22	Malta	-4%
23	Malta	67	23	Hungary	-4,39%
24	Latvia	66	24	UnitedStates	-6%
25	Portugal	65	25	Bulgaria	-6,4%
26	Armenia	65	26	Japan	-6,41%
27	SlovakRepublic	64	27	CzechRepublic	-7,94%
28	Brazil	63	28	Iceland	-9%
29	Hungary	63	29	Philippines	-12%
30	Jordan	63	30	Switzerland	-12%
31	France	62	31	Jordan	-13%
32	Italy	62	32	Italy	-18%
33	Greece	61	33	Lithuania	-21%
34	Philippines	61	34	Canada	-22%
35	Poland	61	35	NewZealand	-24%
36	Albania	60	36	Austria	-27%
37	Bulgaria	59	37	Portugal	-29%
38	Georgia	59	38	RussianFederation	-32%
39	Moldova	58	39	HongKongSAR,China	-37%
40	China	56	40	Greece	-41%

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41	Algeria	55	41	Norway	-41%
42	Turkey	55	42	Ireland	-42%
43	Croatia	54	43	Poland	-42%
44	Indonesia	54	44	SlovakRepublic	-42%
45	Kazakhstan	54	45	Finland	-43%
46	KyrgyzRepublic	54	46	France	-43%
47	Azerbaijan	52	47	Turkey	-44%
48	Ukraine	51	48	Brazil	-44%
49	RussianFederation	49	49	Croatia	-48%
50	Tajikistan	49	50	Australia	-46%
51	BosniaandHerzegovina	44	51	Germany	-53%
52	Uzbekistan	40	52	Georgia	-54%
53	Belarus	39	53	Albania	-72%



Appendix 2

Mixed effects estimation with unstructured covariance and crossed effect for the time indicator (year).

```
xtmixed MSMEemploymenttotal UnCertaintyIndex GDPPerCapitalcurrentUS ||  
_all: R.Year || countrytype: UnCertaintyIndex, cov(uns) || countrynumbers:  
UnCertaintyIndex, cov(uns)
```

Performing EM optimization:

Performing gradient-based optimization:

```
Iteration 0: log likelihood = -1821.8538 (not concave)
Iteration 1: log likelihood = -1821.3572 (not concave)
Iteration 2: log likelihood = -1819.3919 (not concave)
Iteration 3: log likelihood = -1816.4118
Iteration 4: log likelihood = -1816.1729 (not concave)
Iteration 5: log likelihood = -1816.1698
Iteration 6: log likelihood = -1816.1677
Iteration 7: log likelihood = -1816.1532
Iteration 8: log likelihood = -1816.1529
Iteration 9: log likelihood = -1816.1529
```

Computing standard errors:

Mixed-effects ML regression Number of obs = 477

	No. of	Observations per Group		
Group Variable	Groups	Minimum	Average	Maximum
_all	1	477	477.0	477
countrytype	6	36	79.5	198
countrynum~s	53	9	9.0	9

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```

-----
                                Wald chi2(2)      =      27.22
Log likelihood = -1816.1529          Prob > chi2      =      0.0000

-----
MSMEemploymenttotal |      Coef.   Std. Err.      z    P>|z|    [95% Conf. Interval]
-----+-----
    UncertaintyIndex |   .3348463   .2337123     1.43  0.152   - .1232214   .792914
GDPPerCapitalcurrentUS | -.0004059   .0000793    -5.12  0.000   - .0005613   -.0002505
          _cons |   28.65478   17.45478     1.64  0.101   -5.555962   62.86552
-----

Random-effects Parameters |   Estimate   Std. Err.      [95% Conf. Interval]
-----+-----
all: Identity
      sd(R.Year) |   1.789892   .6595291     .8693223     3.685298
-----+-----
countrytype: Unstructured
      sd(UnCert~x) |   .4879043   .1985901     .2197216     1.083419
      sd(_cons) |   38.49956   13.68998     19.17692     77.29167
      corr(UnCert~x, _cons) | -.9763458   .0267741    -.9974677    -.7969573
-----+-----
countrynum~s: Unstructured
      sd(UnCert~x) |   .2329034   .3221717     .0154783     3.50453
      sd(_cons) |   18.18609   16.55641     3.053622    108.3088
      corr(UnCert~x, _cons) | -.6610165   .7396553    -.9976342     .9447031
-----+-----
      sd(Residual) |    8.8514    .3238626     8.238867     9.509473
-----

LR test vs. linear regression:      chi2(7) =   499.18   Prob > chi2 = 0.0000

Note: LR test is conservative and provided only for reference.
Performing gradient-based optimization:

```



Paper 3

3. The Role of the Entrepreneurial Logic in Export Performance of Uzbekistan's Enterprises

Abstract

This study adopts a theoretical concept called effectuation to the export performance management in transition economy research. This concept brings in a new perspective on the issue of how to perform well in exporting by focusing on the decision making in uncertain transition environment. We focus on three identified gaps in the entrepreneurship literature. First, there is a need for more studies in entrepreneurship field in Central Asia. The market context of Central Asian transition economy is more dynamic and hostile, as characterized by economic, social, and political instability and uncertainty (Newman, 2000). As a result, the entrepreneurship outcomes are not as certain as suggested in the previous literature on the economic transformation in transition economies' (Zahra, 1993, 522).

Second, there are limited studies that discussed the entrepreneurial logic in the countries with economies in transition. Third, although research in effectuation comprised the fields such as internationalisation processes of businesses and international entrepreneurship, it still needs to be enriched with studies about exporting in businesses.

We build on Effectuation theory (Sarasvathy, 2001) and investigate the effect of entrepreneurial logic, *Causal vs. Effectual*, on company's export performance in Uzbekistan. Uzbekistan is a Central Asian country with economic transition, and it is proposed that effectual logic is the one which is plausible for entrepreneurs of this country and which leads to successful export performance. It is proposed that the level

of the previous experience and expertise of the entrepreneur does not have impact on the selection of effectual logic due to the specific characteristics related to the transition economy. In addition a special consideration is given to the role of perceived environmental uncertainties. We utilised a Partial Least Square Path Modeling in our analyses. Findings indicate that there is a positive relationship between Effectuation and Export Performance and that this effect does not change based on the level of perceived environmental uncertainty by the entrepreneur. The selection of effectual logic is not either effected by entrepreneur's previous experiences. In general there is very limited use of causation by entrepreneurs in Uzbekistan.

3.1 Introduction

The export performance analysed in previous studies is mainly related to firms in developed economies. Although there were numerous studies on enterprises in transition economies, the effect of entrepreneurial decisions on the export performance of SME's was neglected, while it has been widely acknowledged that the role and decision of an entrepreneur influences directly to the firm's strategy and performance in SME due to its relatively small size and structure. This paper will contribute to this area, and tries to understand the contribution of the entrepreneurial initial decisions in exporting (based on *Effectual* vs. *Causal* approach) to the export performance.

A major purpose of the present study is to investigate the effect of Effectual vs. Causal decisions on export performance of small and medium sized businesses in Uzbekistan. A second purpose is to estimate the importance of prior expertise in entrepreneurship in the selection of effectual logic by the entrepreneurs in Uzbekistan. The third objective is to estimate the influence of the perceived environmental uncertainties on the relationship between entrepreneurial logic and export performance.

There has been a lot of work done to study the determinants of a good SME business performance. Cragg & King (1988) and Rutherford & Oswald (2000) summarised in their

paper all the determinants of SME success identified from the previously done studies. The identified determinants of success can be classified to three types: individual characteristics, firm characteristics, and environmental characteristics.

Studies that examined the impact of individual characteristics of the firm on the business performance have identified the effect of individual characteristics such as: age, education, managerial experience, industry experience, leadership practices, race, CEO personality, and gender (Foley, 1985; Begley & Boyd, 1986; Lussier, 1995; Steiner & Solem, 1988; Miller and Toulouse, 1986; Fasci & Valdez, 1998; Frith, 1998; Ozcelik et al., 2008).

Studies that examined the impact of the characteristics of the firm have studied the firm characteristics such as strategy/planning, structure, competitive orientation, top management team, culture, organizational growth, family control, operations management, and stage of development (Robinson, et al., 1984; Riggs & Bracker, 1986; Miller & Toulouse, 1986; Bracker and Pearson, 1986; Gable & Topol, 1987; Bracker, et al., 1988; Weinzimmer, 1997; Stoica & Schindelmite, 1999; Lerner & Almor, 2002; Pleshko, 2007; Megicks, 2007; Danes, et al., 2008; Oswald, et al., 2009).

Studies that studied the effect of characteristics of the environment on firm performance have focused on contacts with customers, suppliers, competitors, regulatory organizations, consultants, creditors, stockholders, and financial institutions. Other aspects of the environment include perceived uncertainty in the industry environment (Dollinger, 1985; Shrader, et al., 1989; Sawyerr, et.al., 2003).

Some studies found that small companies who planned outperformed those that did not plan (Acklesberg & Arlow, 1985; Miller & Toulouse, 1986). Many researchers have tried to determine predictive variables in entrepreneurial survival. In fact finding predictive variables has been described as the “holy grail” of entrepreneurial research by Sarasvathy & Dew (2005).

Sarasvathy (2001) argues that predictive techniques of management take the existence of artifacts such as firms, customers, markets as granted. Every one of these decisions has the assumed existence of the central artifacts and contexts of business within which the decisions

take place. She continues arguments by questioning how would be possible to make the pricing decision when the market for the product/service does not yet exist (i.e., there is no demand function)? Or how would be valued firms in an industry that did not exist 15 years ago and is still forming in the present (e.g., internet companies)? At the macro level, how to create a capitalist economy from a formerly communist one? Or what should a post-capitalist economy look like?

Sarasvathy argues that if one knew precisely what type of firm he wished to create, he could use existing theories and principles to create the firm. But usually all the entrepreneur knows when he or she starts out is something very general, and is to simply pursue an interesting idea that seems worth pursuing. Consistent with the idea that goals exist in hierarchies (Simon, 1964), Dew, Read & Sarasvathy (2008) suggest that while goals at the highest levels might be clear, their operationalizations at lower levels may be highly ambiguous.

In her Theory of Effectuation Sarasvathy proposes that being entrepreneurial is being effectual, which is being able to maneuver in highly uncertain conditions and environments. She argues that the more expertise have the entrepreneur in entrepreneurship the more effectual he becomes, concentrating in controlling the situations instead of predicting while creating stronger stakeholder networks to minimise the risks and financial loss. Effectuation is strongly empirically based. Since 2001, when the theory was proposed by authors, a number of empirical studies have been published by Sarasvathy and her partners to develop the theory further.

Effectual logic is non-predictive in the sense that it does not require clear goals, accurate predictions, or an adaptive stance toward a largely exogenous environment. Instead, effectuation implies a specific stance toward the world and its occupants that can be theoretically contrasted with a causal or predictive orientation (Dew et. al., 2008)

The empirical studies suggest that entrepreneurs do use effectual elements in the processes of building new firms. These studies confirm that significant differences exist between expert entrepreneur groups and control groups and that effectuation variables are significant irrespective of personality traits. Studies by Sarasvathy & Kotha (2001), Harting (2004) & Harmeling et al. (2004) use case methods to show the presence of effectuation in a variety of

new venture histories. Through a meta-analysis of 24 prior studies, Read & Song (2007) show that three key effectual constructs significantly predict new venture performance. Finally, Wiltbank et al. (2008) use a survey instrument to show that prediction and control variables postulated in effectuation are significant predictors of new venture investor performance.

Key differences between effectuation and predictive decision making are summarized in Table 1.

Table 1: Summary of differences between prediction and effectuation

Issue	Predictive position	Effectual position
View of the future	<i>Prediction.</i> The future is a continuation of the past; can be acceptably predicted	<i>Design.</i> The future is contingent on actions by wilful agents
Constructs pertaining to individual decisions		
Givens	Goals are given	<i>Means</i> (who I am, what I know, and whom I know) are given
Decision agenda	<i>Resources.</i> What resources ought I to accumulate to achieve these goals?	<i>Effects.</i> What effects can I create with the means I have?
Basis for taking action	<i>Desired worlds.</i> Vision of a desired world determines goals; goals determine sub-goals, commitments, and actions	<i>Possible worlds.</i> Means and stakeholder commitments determine possible sub-goals-goals emerge through aggregation of sub-goals
Basis for commitment	<i>Should.</i> Do what you ought to do—based on analysis and maximization	<i>Can.</i> Do what you are able to do—based on imagination and satisfying
Stakeholder acquisition	<i>Instrumental view of stakeholders.</i> Project objectives determine who comes on board	<i>Instrumental view of objectives.</i> Who comes on board determines project objectives
Constructs in terms of responses to the environment		
Predisposition toward risk	<i>Expected return.</i> Calculate upside potential and pursue (risk adjusted) best opportunity	<i>Affordable loss.</i> Calculate downside potential and risk no more than you can afford to lose
Predisposition toward contingencies	<i>Avoid.</i> Surprises may be unpleasant, so invest in techniques to avoid or neutralize them	<i>Leverage.</i> Surprises can be positive, so invest in techniques that are open to them and leverage them into new opportunities
Attitude toward success/failure	<i>Outcomes.</i> Success and failure are discrete outcomes to be sought after or avoided, respectively	<i>Process.</i> Successes and failures are inputs into a process that needs to be managed such that failures are outlived and successes are accumulated
Attitude toward probability estimates	<i>Update beliefs.</i> Estimates are used in a Bayesian fashion—to update ones beliefs about the future	<i>Manipulate conditionals.</i> Estimates signal that conditionals may be reified or falsified so the future can be skewed through action
Attitude toward others	<i>Competition.</i> Constrain task relationships with customers and suppliers to what is necessary	<i>Partnership.</i> Build YOUR market together with customers, suppliers and even prospective competitors
Underlying logic	To the extent we can predict the future, we can control it	To the extent we can control the future, we do not need to predict it

Adapted from Dew, et.al., (2008)

Dew, Read, Sarasvathy, & Wiltbank (2008) connected up effectuation with the behavioral theory of the firm (Cyert & March, 1963). The core logic of effectuation consists in reducing

the use of predictive information and emphasizing action based on resources within the control of the founding entrepreneurs and the stakeholders who self-select into the effectual process. The heuristics comprising effectuation are also consistent with other heuristics discovered in other streams of entrepreneurship research. For example, the bird-in-hand principle (using available resources, networks and expertise) in effectuation partially overlaps with studies of bricolage and improvisation (Baker, 2007; Baker, Miner, & Eesley, 2003). And the affordable loss principle works well with popular practitioner techniques such as Lean Startups and IDEO's Deep Dive as well as more generally with other entrepreneurship-based ideas presented in the trade press (Kiefer, et al., 2010; Sims, 2011).

In a recent summary of the extant literature on effectuation, Sarasvathy (2012) emphasizes a key aspect of effectuation as following:

One of the unique features of effectual logic is that it does not make any assumptions about precedents either at the micro or macro levels. The model does not require standard assumptions of Homo Economicus such as rationality, utility maximization, or ordered preferences (Thaler, 2000), nor does it require the preexistence of particular psychological traits or institutional frameworks, nor even the prior existence of opportunities, particular regulatory or technological regimes, or socio-economic conditions such as specific types of human and social capital.

The effectuator, as described by authors of the theory, does not act alone and the effectual process is interactive. And it is interactive in at least three different ways – over time, across actors and with its environment however defined. Effectual interactions, according to Sarasvathy (2014) at times leverage, strengthen, modify or destroy existing institutions, in part or as a whole.

The description of an effectual entrepreneur by Sarasvathy, comprises majority of attributes of an ideal entrepreneur defined to date by many authors. One example can be the definition given by Timmons (1994, p. 7):

“Entrepreneurship is the ability to create and build something from practically nothing. It is initiating, doing, achieving and building an enterprise or organisation, rather than just watching, analysing or describing one. It is the knack for sensing an opportunity where others see chaos, contradiction and confusion. It is the ability to build a ‘founding team’ to complement your own skills and talents. It is the know-how to find, marshal and control resources (often owned by others) and to make sure you don’t run out of money when you need it most. Finally, it is the willingness to take calculated risk, - both personal and financial - and then do everything possible to get the odds in your favour.”

3.2 How theory of Effectuation is studied and developed to date

Fifteen years passed since the first introduction of an Effectuation Theory. Since then a great deal of work has been done by various researchers. First of all, the initiators of this theory have done a lot to establish the theory on its stance. (Sarasvathy, 1997; Sarasvathy & Kotha, 2001; Dew, 2003; Allen, 2003; Gustavsson, 2004; Harting, 2004; Harmeling et al., 2004; Dew et al., 2006; Read and Song, 2007; Wiltbank et al., 2008) Empirical work on effectuation has used a variety of methods and different groups of subjects. Methods used thus include protocol analysis, surveys, conjoint experiments, qualitative case studies and interviews, mathematical and computer simulations, meta-analysis, and innovative analyses of social media data. Besides expert entrepreneurs, expert corporate managers, and novices, groups of subjects studied include technology ventures in multiple countries, R&D managers, angel investors, venture capitalists, family and small business owners, and international and social ventures (Brettel, et al., 2012; Chandler, et al., 2011; Fischer & Reuber, 2011; Read, et al., 2009; Wiltbank, et al., 2009).

Second, academics from different areas, such as R&D projects, government policies, internationalisation, strategic entrepreneurship, management, have studied the use of effectuation and its effects on performances (see table 1 in the appendix). Effectual logic has been proved as effective strategy in highly innovative R&D projects (Kupper, 2009; Berends, et al., 2014; Svensrud, et al., 2012; Mun, et al., 2014, Anon 2014; Brettel, et al., 2011; York & Venkataraman, 2010), as a viable strategy in highly uncertain processes such as SME

internationalisation process (Mainela & Puhakka, 2009; Kalinic & Forza, 2012; Harms & Schiele, 2012; Kalinic, et al., 2014; Nowiski & Rialp, 2012), as a good strategy for start up process (Gabrielsson & Politis, 2011; Chandler et. al., 2011; Brinckmann, et al., 2010) and new venture performance (Read, et al., 2008; Rust, 2010; Klessens, 2012; Frontiers of entrepreneurship Research, 2010; Read et.al., 2009; Garronne, et. al., 2010; Schlüter1, et al., 2011; Mthantia & Urban, 2015) while its use in policy making by the governments has been found useful when used in balance with causation (Dan, 2013).

From the literature review we found several research opportunities that were not studied yet. One of them is that limited number of studies examined the use of effectuation vs. causation logics by the entrepreneurs performing in the economies with transition process to market economy. In fact this is an interesting field because of the nature of these economies discussed in the previous chapters. Moreover, while there are several papers that investigated the effect of effectuation on venture performance, we could not locate a paper which examined its effect on export performance of SMEs. Moreover the academic world welcomes more studies from the countries of Central Asia. In this paper we are going to focus on these identified research gaps. In the following section we will present a conceptual framework and build related hypotheses. In the third section we will describe the used research methodology while in the fourth and fifth sections we will present with analysis of findings and conclusions respectively.

3.3 Conceptual Framework and Research Hypotheses

Dew et.al. (2008) named an effectuation theory as a behavioural theory in transformation and contrasted it with *A Behavioral Theory of the Firm* (BTF) proposed by Cyert & March (1963). BTF presents ideas for explaining the behaviour of established firms within an environment of well-defined markets, stakeholder relationships, technologies, and so on, while Dew et.al. (2008) outline a behavioural theory of the *entrepreneurial* firm that emphasizes *transforming* environments rather than acting within extant ones. In particular, they explicate three ideas that parallel key concepts in BTF: (1) accumulating stakeholder

commitments under goal ambiguity (in line with a political conception of goals), (2) achieving control (as opposed to managing expectations) through non-predictive strategies, and (3) predominately exaptive (rather than adaptive) orientation.

A central differentiator between entrepreneurial firms and existing firms examined in the BTF is that the twin institutions that comprise the capitalist market system, firms and markets (Coase, 1988), are *not assumed as givens* in entrepreneurship. Either the firms are new, or the markets are new, or both. If we follow the conventional lines of evolutionary and ecological reasoning in economics and sociology (Geroski, 2002), we see that entrepreneurship is centrally concerned with how two key elements of the market system are originated: first, how the firms that offer new goods come to be, and second, how “the market,” which is hypothesized to select among firms, comes to be. Thus entrepreneurship is the study of processes and methods of origination of *both* evolutionary mechanisms, namely, *variation* and *selection*. As Nelson & Winter (1982) have observed, it should come as no surprise at all that the origination of markets and firms are interlaced and often develop in concert with one another.

The aspect of transformation is highly relevant to the economies in transition, as this is related to transformation of institutions, markets and firms as a whole. The dynamic, complex, and evolving environment in transitional economies has a high impact on the nature of entrepreneurial opportunities (Smallbone & Welter, 2001; 2006) and influence the trajectories of entrepreneurial new ventures (Peng, 2003). In these economies it is more vivid the process of how institutions create entrepreneurs and how the entrepreneurs create markets and also how markets create new entrepreneurs. Therefore as stated in Smallbone & Welter (2004) the characteristics of entrepreneurs in transition countries and their economic impact cannot be assumed to be the same as those in Western countries.

While there were limited studies conducted to learn the implications of effectual theory in the transition economies context, it seems it is the most plausible strategy for the entrepreneurs in this transforming environment as discussed in the first chapter of this study. We have proposed that each aspect of the effectual space described by Sarasvathy and her colleagues in their various articles (Shane & Venkataraman, (1999); Sarasvathy, (2001); Sarasvathy et al.,

(2003); Read and Sarasvathy, (2005); Sarasvathy, (2008); Sarasvathy, Dew, Read, & Wiltbank, (2008); Dew et al., (2009); Sarasvathy, (2010); Chesbrough, (2010) Chandler et al., (2011)) coincide with each aspect of the transition economy (see for example: Susjan & Redek, 2008; Nee 1992; Peng & Heath 1996; Peng, 2000; Pisani 2009; Huang & Brown 1999; Meyer & Gelbuda, 2006; Burt, 1992; Ledeneva, 2006, Manolova & Yan, 2002, Smallbone & Welter, 2001, Yan & Manolova, 1998; Smallbone & Welter, 2010 etc.) where the prediction does not make much sense. (see chapter 1).

The main idea we would like to present here is that the importance of entrepreneurial expertise in the selection of effectual logic instead of a causal logic decreases in the transition economy due to the difficulty or impossibility of using causal logic as described in the first chapter. Sarasvathy defines effectuation as the logic of experts. Sarasvathy (2001) developed a baseline model of expert entrepreneurial cognition the central element of which was effectual thinking. The first descriptive study on effectuation was performed by Saravathy in 1999, on a collection of 27 successful entrepreneurs from diverse entrepreneurial and academic backgrounds. They had all founded companies that at the time were worth between \$200 million and \$6.5 billion. In solving the hypothetical problems presented to them, 74% of the participants used the effectuation model at least 63% of the time, and 44% of them at least 85% of the time. Similarly, Allen (2003) found a strong correlation between the use of effectuation and experience; and found that most psychological measures of personal traits are uncorrelated with use of effectuation. Dew et.al. (2008) asked 27 expert entrepreneurs and 37 MBA students to think aloud continuously as they solved typical decision-making problems in creating a new venture. Transcriptions were analyzed using methods from cognitive science. Results showed that expert entrepreneurs framed problems in a dramatically different way than MBA students. In support of theory, this study demonstrated that entrepreneurial experts frame decisions using an 'effectual' logic (identify more potential markets, focus more on building the venture as a whole, pay less attention to predictive information, worry more about making do with resources on hand to invest only what they could afford to lose, and emphasize stitching together networks of partnerships); while novices use a 'predictive frame' and tend to 'go by the textbook'. Almost all of the studies presented by Sarasvathy and her colleagues accentuate the role of the previous experience of an entrepreneur in selecting the effectuation.

To be causal means to possess with formal management, marketing, financial management skills, to possess with marketing secondary and primary research data, to possess with enough financial resources and to be in a well developed stable institutional environment. These criteria are not accomplishable in the transition economy. The entrepreneurship and private sector is new for any country with transition economy and therefore education in business does not have a western quality. The information about customers, rules and regulations, competitors and foreign markets is hardly obtainable. The banks and other financial entities do not possess with enough financial resources for entrepreneurs, and people do not possess with own savings due to the previous communistic regime of these countries. The environment is highly uncertain due to the constant institutional changes, corruption and unavailability of information about the changes in legislation. The market context of transition economies especially found in Central Asia is more dynamic and hostile, as characterized by economic, social, and political instability and uncertainty (Newman, 2000). As a result, 'the entrepreneurship outcomes are not as certain as suggested in the previous literature on the economic transformation in transition economies' (Zahra, 1993, 522). Following these conceptual differences, Luthans & Ibrayeva (2006) suggest that the rapid and often hostile changes in the political, economic, and social changes in Central Asia are placing unprecedented demands on entrepreneurial functioning.

According to the authors of the Effectuation theory, the more experience one has in the entrepreneurship the more effectual he becomes. At the same time they argue that the more formal business education one has with less or no entrepreneurial experience the more he relies on the causation. However, there is no specific answer to the question, what happens to the entrepreneurial approach when there is a limited good quality modern formal business education and no entrepreneurial expertise in a highly transforming, dynamic economy. Which approach is used by the entrepreneurs in this environment? Due to the circumstances with lack of financial resources (Doing Business in Uzbekistan, 2015), with high importance of networks (Business Environment in Uzbekistan as Seen by Private Enterprises, 2009), with high level of uncertainties (Susjan & Redek, 2008; also see Chapter 1 of this thesis) and lack of quality business education (ADB, 2015; ETF, 2010) and with lack of quality information (IFC, 2002) entrepreneurs of Uzbekistan have to rely on three things: who they are; what they know; and whom they know. Constrained creativity, an element of Effectuation theory,

seems the most available strategy. Consistent with our conclusions in the first chapter that the transition economy environment is an ideal effectual problem space, we propose that entrepreneurs in Uzbekistan (a country with the economy in transition) mainly use effectual logic and the level of formal education and previous entrepreneurial experiences do not have importance on the selection of this logic. Hence we are studying the exporting businesses in Uzbekistan consistent with research objectives we propose:

H 1: There is no impact of the level of entrepreneurial experience, international experience, internationalisation experience, education level on the choice of Effectual logic over Causal logic by Uzbekistan's exporting entrepreneurs.

Our hypothesis lies in line with Engel et. al. (2014) findings where entrepreneurial prior expertise had little impact. Engel et.al. (2014) in their work, provide the theoretical justification for links between Entrepreneurial Self-efficacy (ESE) and Effectuation. ESE reflects the strengths of one's confidence in the ability to perform entrepreneurial-tasks (Chen et al., 1998). According to Engel et.al. (2014) when ESE is high individuals feel confident about their entrepreneurial ability and they are more likely to frame an uncertain environment as an opportunity and thus rely on effectual logic in their decisions. Engel et.al. (2014) argue that these features position ESE as an important antecedent of decision-making in general, but also as a common factor that may be shared by experts and novices alike. Importantly, even when lacking any prior experience, individuals may be highly confident (Camerer & Lovo, 1999; Townsend et al., 2010) and entrepreneurial decisions are often attributed to such (over)confidence in ability (Hayward et al., 2006; Koellinger et al., 2007; Wu and Knott, 2006). Their results of a randomized experiment show that, in contrast to a control group and a low ESE group, novices who experienced an increase in ESE were more likely to use effectuation under uncertainty.

Additionally, in the study of home-based online businesses, by Daniel, et.al., (2014), different results have been obtained. According to Daniel, et.al., (2014) home-based online businesses allow effectuation to be associated with both low levels of entrepreneurial self-efficacy and low level of experience.

3.4 The literature about the effects of Effectual vs. Causal logic on business performance

The effectuation and causation are not polar opposites of the same scale. Rather, they represent different approaches that might be used at different times or under different circumstances (Perry et al., 2012; Sarasvathy, 2008; Crick & Crick, 2016). As such, effectuation and causation are not a matter of a binary option to decision making, but rather a selection from among a number of differing options and principals, on the basis of the decision maker and the task at hand (Sarasvathy, 2001). Up to date several authors intended to measure the impact of dimensions of effectuation on venture performance. However there is a still limited knowledge of the impact of effectuation on firm outcomes (Read, et al., 2009; Wiltbank et al., 2009). Read, et.al. (2009) in their meta-analytic review of effectuation and venture performance measured the relationship between effectual principles and new venture performance. As a result of their quantitative analysis of a sample of 9897 new ventures spanning industries, geographies, time and individual founders indicate that all the heuristics which describe effectuation except *Affordable Loss*, which returned insignificant results, are positively and significantly related to new venture performance.

Kupper & Aachen (2009) found that the R&D projects that are highly innovative have been more successful when used effectual logic in management decisions, therefore related the effectuation to high performance during innovation. The results of the meta-analysis by McKelvie, et al. (2013) demonstrate that the use of effectuation has a significant impact on the performance of the firm, however they consider that there is a need for further more rigorous investigation.

Effectuation is, where the focus is primarily affordable loss, with which entrepreneurs pursue opportunities that allow them to invest only what they can afford to lose. This would thus imply a focus on limiting downside potential as opposed to maximizing financial returns. McKelvie, et.al. (2013) state that from this perspective, it is unlikely that instead of leading to superior financial performance, effectuation would be more likely associated with loss/failure avoidance. But then they acknowledge that the empirical development of the effectuation construct was based on think aloud protocols using expert entrepreneurs. Read et al. (2009) found that —expert entrepreneurs are significantly more likely to use heuristics

based on an effectual logic thus identifying —distinct mechanisms for keeping costs down and pushing revenues up. From this perspective, those using effectuation would have superior performance (McKelvie, et.al., 2013).

McKelvie, et.al. (2013) empirically examined the potential firm level outcomes of the use of effectuation. They found a pattern of mixed results. This mix of findings, the authors consider, is important and helps to provide useful details to the impact of effectuation. It appears as though only certain components help drive performance outcomes – and in some cases have opposite roles to play. McKelvie, et.al. (2013) stated that this helps to further establish effectuation as a multi-faceted latent construct where all of the sub-components do not have an equal role to play.

There were studies investigating the use of effectual and causal logic in the business plans or the estimation of the use of these logics by angel investors. Wiltbank, et.al.,(2007) studied of 121 angel investors who had made 1038 new venture investments during 10 years time period. They empirically investigated angel investors' differential use of predictive versus non-predictive control strategies. They argued that the use of these strategies affects the outcomes of angel investors. Results showed angels who emphasize prediction make significantly larger venture investments, and those who emphasize non-predictive control experience a reduction in investment failures without a reduction in their number of successes.

In their subsequent study Wiltbank, et.al. (2009) investigated how investors make decisions. According to them, the investors' use of predictive and non-predictive information varies based on their own approach to dealing with uncertainty, their own entrepreneurial experience, and the steps in the evaluation process (i.e. screening, due diligence, and funding). Evaluating data from more than 2,700 individual investor evaluations of 150 new ventures, Wiltbank, et.al. (2009) found that investors with more entrepreneurial experience are more effectual in how they approach the development of new ventures. They also found that investors grade their area of emphasis more stringently, i.e. those who weight predictive information grade it 'tougher'.

Christophe Garronne, et. al. (2010) explored empirically effects of effectuation on firms performance overtime. In their examination of a longitudinal sample of 625 nascent firms collected over two years in Australia have provided support for their hypotheses. Results have indicated that in the situation of high uncertainty, nascent firms using effectuation were more likely to reach operational stage than their counterpart using causation. Moreover Mauer, et.al. (2010) analyses indicated that the time it takes to start (or abandon) a new venture is dependent on the adoption of key effectuation principles during the process. Two of the four principles, means orientation and partnerships, have a direct effect, whereas affordable loss and leveraging contingencies are indirect. They respectively impact the cycle of expanding resources and the cycle of converging goals and constraints. Although the effectuation was highly related to the business performance measures, the effectuation related to the export performance is not studies. Only had the recent two studies by Crick & Crick, (2015; 2016) concentrated on decision making (the use of effectual vs. causal approaches) of entrepreneurs in several small businesses in UK, in their process of internationalisation, in exporting and receiving their first export order. They concluded that no single factor could fully explain the conditions that surround the export initiation process and that moving from causation- to effectuation-based decision-making can assist owner/managers to better evaluate risk/reward decisions to meet objectives and assist the internationalisation path.

Still there is an opportunity to research the relation of effectual and casual decisions to the export performance. In the following part of our study, we intent to bring the effectuation studies together with the studies of export performance of SMEs and draw the related hypotheses.

3.5 The review of determinants of export performance for SMEs

Contribution of small and medium enterprises (SMEs) in global export is becoming significant but still a large number of these are unable to outperform in international market. (Nazar & Saleem, 2009). Several studies investigated the determinants of export performance and barriers to exporting for SMEs (Aaby & Slater, 1989; Chetty & Hamilton, 1993; Kaleka &

Katsikeas, 1995; Kent, et.al., 2006; Leonidou, 1995a, 1995b, 2004; Zou & Stan, 1998; Nazar & Saleem, 2009).

Different reviews classified the existing determinants using different classifications, such as, internal and external factors, controllable and uncontrollable (the factors that cannot be changed in short period of time), or linking the determinants to the theories such as, Resource Based Theory, Industrial Organisation Theory, Theory of Dynamic Capabilities, Structure–Conduct–Performance Paradigm.

Further the same determinants were grouped by categories such as, export marketing strategy, managers' attitudes and perceptions, managers' characteristics, firm characteristics and competencies, industry, and foreign and domestic market characteristics. (Aaby and Slater, 1989; Da Rocha and Christensen, 1994; Zou & Stan, 1998).

While other determinants such as, firm's marketing and management strategies, the firm's size, the firm's experience, firm's environment, exporting countries and others have been considered widely, our focus will remain on the determinants such as entrepreneurs' or managers' characteristics. Managers' characteristics were proved as the major determinants of export performance. (Zou & Stan, 1998). Moreover, it has been long established that the characteristics of the management team, broadly defined their experience and motivation, are key to influencing their respective firm's export development (Leonidou et al., 1998; Acedo and Galan, 2011; Kuppusamy and Anantharaman, 2012). The way in which respective management teams react to export barriers, the stimuli that are internal vs. external to the firm or proactive vs. reactive in nature are likely to vary (Leonidou, 1995; Morgan, 1997; Leonidou *et al.*, 2007; Kahiya, 2013).

Many researchers have studied the management characteristics as determinants of export performance through different dimensions (Aaby and Slater, 1989; Ibeh, 2003; Suárez-Ortega et. al., 2005). To synthesize these diverse dimensions Nazar & Saleem (2009) classified these into categories named 'attitudinal characteristics', 'skill based characteristics' and 'behavioral characteristics'. These authors focused on the factors that are classified as firm-level controllable determinants which influence the export performance of SMEs.

Attitudinal characteristics include:

- *Management Commitment:* Management's export commitment is one of the key determinants of export performance (Aaby & Slater, 1989; Zou & Stan, 1998). Cavusgil & Zou (1994) found that high management commitment allows to follow successful export marketing strategies that help to enhance export performance and this was also confirmed by Julian (2003)
- *Management perception toward competitiveness:* Management perception in the competitiveness of the export product has relation with the exporting result of the companies (Madsen, 1998). Eusebio et. al. (2007), found that greater management confidence in the competitiveness of the export product increase the export intensity of the firm.
- *Management Perception towards export advantages:* How management foresee the export advantages and their contribution to export profits are the good determinants of export performance. (Axinn, 1988; Aaby & Slater, 1989; Zou & Stan, 1998).
- *Management's international orientation:* International vision (Aaby & Slater, 1989) and international orientation (Zou & Stan, 1998) are considered to be regular forecaster of export performance. Most probably, an international firm can better see opportunities and stay away from threats
- *Management's customer orientation:* Katsikea & Skarmas (2003) has found that export manager's high level of customer orientation contribute to effective export performance and low level of customer orientation leads to less effective export performance.

Skill Based Characteristics include managers:

- *Export Experience:* There is a positive relationship of export experience with export propensity (Ibeh , 2003) and intensity (Suárez-Ortega & Álamo-Vera, 2005).
- *Foreign Language Proficiency:* Suárez-Ortega & Álamo-Vera, (2005) have found managers' foreign language proficiency positively correlated with both export propensity and intensity. Similar results are found by Louter et. al. (1991)
- *Education Level:* Suárez-Ortega & Álamo-Vera, (2005) have identified a positive however weak correlation of education level with export performance.

Behavioral Characteristic include: Manager's involvement in export sales planning, export sales presentation, adaptive selling, sales support.

- Katsikea & Skarmas (2003) have identified that the way of managers' involvement in export sales planning, export sales presentation, adaptive selling, sales support changes the level of export sales effectiveness from low to superior.

At the base of the majority of managerial characteristics important for export performance is the importance of knowledge of international markets. A lack of knowledge about international markets is often cited by firms as one of the main barriers to exporting and internationalisation (Roper & Malshe, 2013). Exporting is one of the methods of internationalisation. In the context of organisational learning theory, internationalisation can be seen as a process of knowledge and learning accumulation that takes place within the firm (Barkema & Vermeulen, 1998; Yeoh, 2004). Thus experience helps firms overcome the difficulties and uncertainties of going international (Westhead, Wright, & Ucbasaran, 2001).

The international business literature has traditionally strongly emphasised the experiential aspect of learning as envisaged in the process approach to internationalisation (Johanson & Vahlne, 1977). This may involve deliberate learning, but because it derives from the process

of ‘doing business’, experiential knowledge is likely to arise simply as an unintentional consequence of operating in an international context, and is therefore difficult or impossible to acquire in different ways (Casillas, et al., 2015). Eriksson, et al. (1997) & Eriksson, et al. (2000) stress that market knowledge comprises both business and institutional knowledge. They demonstrate that a firm’s experiential internationalisation knowledge, that is its experience of organising the process of going international in different settings, as embedded in the routines and organisational practices of the firm, is a critical element in reducing the perceived cost of the internationalisation process.

Suitable knowledge may also be acquired through the prior experience of management, what Fletcher & Harris (2012) following Huber (1991) call ‘grafted’ knowledge. Recruitment of managers with international or export experience represents a direct injection of international understanding into the firm and is likely to increase the extent of internationalisation.

Within the International Business literature, conceptual models aiming to understand the internationalization process are increasingly starting to include entrepreneurship as a key element in this process. Johanson & Vahlne (2009) argued that internationalization resembles entrepreneurship and may be described as corporate entrepreneurship and that internationalization too is characterized by high degrees of uncertainty. They argued that the effectuation process has much in common with their internationalization process model, including similar environmental characteristics, a limited number of available options, incremental development, and an emphasis on cooperative strategies (2001: 251). Meanwhile Werhahn, et.al., (2015) proposed a term effectual orientation and classified it as strategic direction in the corporate context. Sarasvathy et.al., (2013) highlighted three characteristics of conducting cross-border business that call out for theories from entrepreneurship in general and effectuation in particular: *Cross-border uncertainty, Limited resources, Network dynamics*.

The Internationalisation process creates an ideal *Effectual Space*. This is confirmed by authors such as, Jones and Coviello (2005); Schweizer et al., (2010) who argued that the Effectuation theory may also be particularly suitable as a building block for internationalization theory,

since internationalization can also be framed as a decision-making problem under uncertainty.

The outlined research suggests that international entrepreneurship includes the same elements as other types of entrepreneurship, but it calls for high levels of cognitive creativity, a willingness to absorb uncertainty, high levels of the ability to bear uncertainty, and a wide scope of search. The following section will present current state of the field *Effectuation during the Internationalisation process*.

3.6 The role of Effectuation in the SME internationalization

Introduction to International entrepreneurship (IE) literature has indicated that entrepreneurs often successfully adapt to changing environmental circumstances by combining networking, resource based analysis, and serendipity which results in ‘unplanned’ internationalization (Chandra, et al., 2009; Crick & Spence, 2005). The term ‘unplanned’ refers to the fact that a firm expands internationally without a precise plan; nevertheless, it successfully develops international activities. By reacting to opportunities, they effectively adopt emergent strategies (Crick & Spence 2005). This fact could be explained through the lens of Effectuation theory, as it was noticed by Schweizer et al., (2010) who suggested to elaborate Effectuation theory into International Entrepreneurship and develop new insights for future work at the intersection of the two literature streams.

The connection between internationalization and entrepreneurship has been highlighted in the work of Jones & Coviello (2005) as well, who conceptualized internationalization as an ‘entrepreneurial process of behavior in time’ (p. 284) and frame International New Venture Creation as a process under uncertainty. This explicit introduction of decision-making under uncertainty makes effectuation a welcome addition to established internationalization theories that do not emphasize this particular aspect. Whitelock (2002) analyzed a range of internationalization theories, including the eclectic paradigm (Dunning 1988), transaction cost analysis (Erramili and Rao 1993), what she labeled as the interactive network approach

(Turnbull 1987), and the business strategy approach (Welford and Prescott 1994). She found all of these approaches fail to effectively capture decision-making under uncertainty because ‘each of the theories presented above is dependent to some extent on the existence of market information to inform internationalization decisions’ (p. 344–345). According to Kalinic, I. et.al.(2008), from an information processing point of view, the effectual decision-making can be considered a useful approach when dealing with an increased external environment complexity. Moreover, the uncertainty of the internationalization process itself, in presence of goal ambiguity and environmental isotropy, pushes entrepreneur to adopt effectuation logic (Kalinic, I. et.al.,2008).

The prior research that focused on the effectuation vs. causation logics within the internationalisation process of firms is summarised in the table of the Appendix 2. According to the review of this literature several general assumptions can be made. *First* of all, all the studies except one, employed case study approach in their paper. *Second*, all the studies confirmed that effectuation logic is useful in the internationalisation process and that all the companies in the studies relied primarily on their available resources and networks in their internationalisation process. The interesting point was that the entrepreneurs with relatively little knowledge or experience of foreign markets were able to discover international opportunities (Eversa & O’Gorman, 2011). Founding entrepreneurs of international new ventures in the context of CEE transition economies compensate for uncertainty stemming from the lack of international (business) experience and international social capital by following effectuation logic (experimentation, flexibility and affordable loss) around the start up phase (Nowiski & Rialp, 2013). *Third*, entrepreneurs try to make the complicated situation controllable by using effectuation (Mainela & Puhakka, 2009). If it appears too complex, they pass smoothly to the effectuation logic (Kalinic, Sarasvathy, Forza, 2013). *Forth*, it is possible to perform an unplanned high level of international commitment in an unknown market and unexpectedly accelerate the internationalization process despite limited international experience and lack of an international network (Kalinic, Sarasvathy, Forza, 2013). This is confirmed by Lazaris (2014) as well, who found that the initial internationalisation can be a reactive process based on a perpetual but unplanned process of networking, experimentation, and foreign market entry and exit based on low cost entry modes such a exporting and contract manufacturing. A planned approach to internationalisation is not possible for several reasons, namely the lack of firm resources such

as capital and human resources as well as the lack of previous international experience, and therefore knowledge and networks for internationalisation (Lazaris, 2014). Even more, in some cases, respondents found it difficult to specify the exact point in time when the firm made a decision to internationalize, and how the actual foreign expansion started, because it is an organic process of the firms' development (Galkina & Chetty, 2015). *Fifth*, the experienced entrepreneurs tend to apply effectuation rather than causation, while uncertainty does not have a systematic influence (Harms & Schiele, 2012). However, the nature of prior knowledge and experience needs to be clarified. The cases suggest that prior knowledge is not necessarily 'deep' knowledge nor is it industry or market specific knowledge, but a general experiential knowledge (Eversa & O'Gorman, 2011), while the specific knowledge of the process leads more to causation. *Sixth* the learning from the previous specific experience emphasize the use of causation. This is confirmed in several papers including in Kalinic, et.al.'s (2013). In the subsequent expansions abroad, the entrepreneurs employed a more systematic approach moving closer to casual logic in decision-making due to learning from the first production-oriented internationalization (Kalinic, Sarasvathy, Forza, 2013). When making decisions on internationalisation, entrepreneurs are more likely to follow effectual logic when entrepreneurs do not possess prior internationalisation experience. (Mlinaric, Obloj, Wasowska, 2016). *Seventh*, the founder's local and international networks were important (Svante Andersson, 2011). The case studies showed that in general firms' networking activities are crucial for internationalization, and that the whole process of foreign expansion was driven by network relations (Galkina & Chetty, 2015). Specifically, the effectual logic of networking influences decision-making in the internationalization process. Networking effectually is a conscious choice made by the entrepreneurs, and in preference to networking strategically and systematically. The process of networking itself is not purely strategically driven by a predefined network goal or written as a plan, but is also more effectual (Galkina & Chetty, 2015). Newly established contacts are added to the existing 'who I know?' part of effectual means, and subsequently used for further networking. It is supported that effectual partnering differs from serendipitous networking and coincidental meeting of people at random (Galkina & Chetty, 2015). Markets were chosen, primarily where the entrepreneurs found distributors with whom they could create a strategic alliance (Andersson, 2011). Distributors were not chosen because they had the best position in the market. They preferred to co-operate with distributors, so they could take advantage of their

knowledge and networks (Andersson, 2011). Network partners act as ‘effectual stakeholders’, reducing the level of uncertainty faced by an International New Ventures (Mlinaric, Obloj, Wasowska, 2016). The decisions were made once the internationalization was in the process according to the means available and interaction with people (Kalinic, Sarasvathy, Forza, 2013). *Eighth*, the concepts need not be diametrically opposed, and companies seem to be able to use both to a large extent (Harms & Schiele, 2012). The effective born global leaders are those who can use effectuation logic in unpredictable situations and causation logic in predictable situations (Svante Andersson, 2011). A decision-maker makes decisions by following the logic of both effectuation and causation independent of the internationalisation stage of a firm (Schweizer, 2015). The chosen approach is influenced by the nature of the perceived problem space, existing decision-making routines and heuristics and the inability of decision-makers to learn from previous internationalisation decisions due to the idiosyncratic nature of each foreign expansion (Schweizer, 2015). The logic shifts depend on the characteristics of the problem space (i.e., perceived uncertainty) in International New Ventures as well (Mlinaric, Obloj, Wasowska, 2016). Entry of a Venture Capitalist, for example, triggers the shift of the decision-making logic of an International New Ventures from effectuation to causation, especially in well-recognized fields (such as domestic markets) characterized by low uncertainty (Mlinaric, Obloj, Wasowska, 2016). A Venture Capitalist may accept effectual logic (based on ‘entrepreneurial expertise’) as an asset when going international (i.e., venturing into a new field characterized by high uncertainty) (Mlinaric, Obloj, Wasowska, 2016). The change of logic adopted to make decisions allowed an unplanned rapid switch in the level of foreign commitment and, within three years, to unexpectedly evolve from locally oriented companies with passive international activities to global SMEs with FDIs on different continents. That is possible because the switch from causal to effectual logic reduces the amount of information required before acting (Kalinic, Sarasvathy, Forza, 2013). Two studies by Crick & Crick, (2015; 2016) focused on several small businesses in UK in their process of internationalisation by exporting. They concluded that no single factor could fully explain the conditions that surround the export initiation process and that moving from causation- to effectuation-based decision-making can assist owner/managers to better evaluate risk/reward decisions to meet objectives and assist the internationalisation path. While effectual approaches open up and create new markets at low costs of failure, causal approaches can help stabilize and establish

leadership in those new markets (Sarasvathy, et.al., 2013). Both are needed in sustaining the growth and survival of established enterprises. Expert entrepreneurs who choose to build large ventures, as opposed to building a portfolio of smaller ones, have to become good at using both causal and effectual toolboxes and more importantly, to know when and how to use which and also to mix and match as needed (Sarasvathy, et.al., 2013).

Some studies identified unique findings, such as that of Harms & Schiele (2012), that the psychic distance is related to causation type behaviour. This calls into question the type of uncertainty with which psychic distance is associated. The entrepreneurs perceive psychic distance more as an information gap that they can try to close with formal planning than as a fundamental uncertainty (Harms & Schiele, 2012). Another unique finding was of Gabrielsson & Gabrielsson (2013) that the entrepreneurial logic is a moderator in the relationships of constructs such as resources, capabilities, entrepreneurial orientation at one side and the learning on growth phases & survival on the other side. (See appendix 2 for the summary of the literature in effectuation and internationalisation)

The exhaustive list of published studies related to effectuation during internationalisation process is not big due to the comparable novelty of the Effectuation Theory itself. Therefore there is a need to rigorously investigate the entrepreneurial logic through the utilisation of effectuation and causation in order to draw more accurate conclusions. Moreover, there is a research gap towards the investigation of the use of effectuation in the export type of internationalisation, in terms of its effects on export performance.

Considering the findings from a number of discussed studies that identified positive impact of Effectuation on venture performance, especially when the environment is highly uncertain, and that the Effectuation is effective to use during the process of internationalisation of a firm and taking into consideration that the effects of the founder or top management continue to emerge as the key explanation of success in export performance of SMEs, we propose:

H2: The relationship between the Effectual Logic and Export Performance is positive in exporting SMEs in Uzbekistan.

Although we have hypothesised earlier that the main logic used by Uzbek entrepreneurs is the effectuation due to the complexity of utilisation of causation approach in the transition economy, to examine to what extent it is true, we also measure the possible effect of Causation methods on the Export Performance of SMEs in Uzbekistan. By taking into account that Effectuation and Causation constructs are not opposite constructs and may co-exist (Sarasvathy, 2001) we propose a separate hypothesis:

H3: The relationship between the Causal Logic and Export Performance is positive in exporting SMEs in Uzbekistan.

Review of the effect of uncertainty on entrepreneurial logic.

Uncertainty is the pre-condition for effectual decisions. The ideal effectual space of transition economies was discussed in the first chapter, where the effectual space of Uzbekistan's business environment was scrutinised. Situations where the past is not a reliable predictor of the future are where effectuation provides heuristics that use the non-predictive techniques in entrepreneurial settings (Stuart Read et. al., 2008). Furthermore it was confirmed by numerous studies that the effectuation as a decision-making process that allows for greater organizational resilience against environmental shocks and pressures and is recommended for entrepreneurial settings of heightened uncertainty (Chandler et al., 2011; Chesbrough, 2010). Sarasvathy (2001) proposed effectuation as the dominant model for entrepreneurial decision-making, particularly in the absence of pre-existent markets. Further theoretical development of effectuation theory has positioned it in the landscape of strategy making as useful in situations where predictability is low, but controllability of the situation is high (Wiltbank et al 2006). Moreover, effectual logic is found to better explain the behavioural difference between entrepreneurs and non-entrepreneurs, and between expert entrepreneurs and novice entrepreneurs in their perception of and response to risks and uncertainty. According to Hebert and Link (1988), since the earliest history of economic thought concerning entrepreneurship, it has been inextricably intertwined with uncertainty. Entrepreneurial expertise, in short, equals expertise in uncertainty. The canonical thesis on this equality can be found in Knight's (1921) seminal work on the relationship between profit and unpredictability. Knightian uncertainty removes the assumption that phenomena can be modelled and predictions can be accurately made based on historical data.

As stated in Sarasvathy et.al., (2009) historically, the research on decision-making under uncertainty can be divided into (a) the normative development of rational decision models (MacCrimmon, Wehrung, & Stanbury, 1986) and (b) empirical investigations into bounds on that rationality in actual decision makers (Kahneman & Tversky, 1990). The normative development is rooted in the conceptual distinction between “risk” and “uncertainty” (Knight, 1921). Both normative approaches have been qualified by researchers who have shown that human beings in general are not strictly rational (Simon, 1959). Instead, their rationality is bounded by cognitive limitations such as physiological constraints on computational capacity (Payne, Bettman, & Johnson, 1993); and psychological limitations such as biases and fallacies (Bar-Hillel, 1980; Tversky & Kahneman, 1982). Yet this does not imply that decision makers are irrational. Rather, the evidence suggests that within certain bounds, decision makers use heuristics that often lead to very effective decisions (Gigerenzer, Hell, & Blank, 1988). The arguments from both perspectives – rationality and bounded rationality – is summarized by Sarasvathy, et.al., (2009) as follows, if the decision makers believe they are dealing with a measurable or relatively predictable future, they will tend to systematically gather information and invest some effort on a reasonable analysis of that information, within certain bounds. Similarly, if they believe they are dealing with relatively unpredictable phenomena, they will try to gather information through experimental and iterative learning techniques aimed at first discovering the underlying distribution of the future (Sarasvathy, et.al., 2009). Therefore, the firms devise and negotiate an environment so as to eliminate the uncertainty. Rather than treat the environment as exogenous and to be predicted, they seek ways to make it controllable. (Dew, et.al., 2008)

Consequently, we ought to consider the level of environmental uncertainty when dealing with any relationship concerning to the effectuation. In our case it would be the effect of the level of uncertainty on the relationship between entrepreneurial logic and export performance. The best way of identifying the level of the existing environmental uncertainty is to identify the perception of entrepreneurs of the level of uncertainty related to different aspects of their business.

3.7 The sources of the perceived environmental uncertainties

Gathering information cannot always reduce uncertainty. Uncertainty can exist even in situations where much information is available (Koppenjan & Klijn, 2004). In this part we are going to focus on the role of the previously discussed perceived environmental uncertainties since the perceived uncertainties, and not objective uncertainties, influence the behaviour. Supporters of the perceived view on uncertainty argue that uncertainty is dependent on the individual and cannot be measured objectively (Milliken, 1987). Wernerfelt & Karnani (1987) argue that distinguishing between different sources of uncertainty is important for choosing appropriate strategies to cope with the uncertainty. The source of uncertainty is the domain of the (organizational) environment, which the decision-maker is uncertain about (Milliken, 1987). To examine the level of perceived environmental uncertainties in our research we will classify perceived uncertainties according to their source as it was done in several prior works such as in (Miller, 1993; Meijer, et.al., 2007). There are two classes of sources of uncertainties we are considering, those that are in home country and those that are in exporting country. The definitions and measurements for the sources of uncertainties employed are adapted from Miller (1993) and Meijer, et.al. (2007).

Home Country Perceived Uncertainty Sources

Political uncertainty – is about governmental behaviour, regimes and policies. Uncertainty can emerge about current policy (e.g. uncertainty about the interpretation or effect of policy, or uncertainty due to a lack of regulation) or about future changes in policy. Uncertainty about governmental behaviour (reliability of the government) is also an important cause for political uncertainty.

Resource uncertainty - is about the amount and availability of raw material, human and financial resources needed for the export.

Supplier uncertainty - amounts of uncertainty about timing, quality and price of the delivery. Supplier uncertainty becomes increasingly important when the dependence on a supplier is high.

Economic Uncertainty - prevails in transition economies and this source includes inflation rate, exchange rate with dollar and interest rate.

Export Market Perceived Uncertainty Sources

Competitive uncertainty - relates to uncertainty about the behaviour of (potential or actual) competitors and the effects of their behaviour.

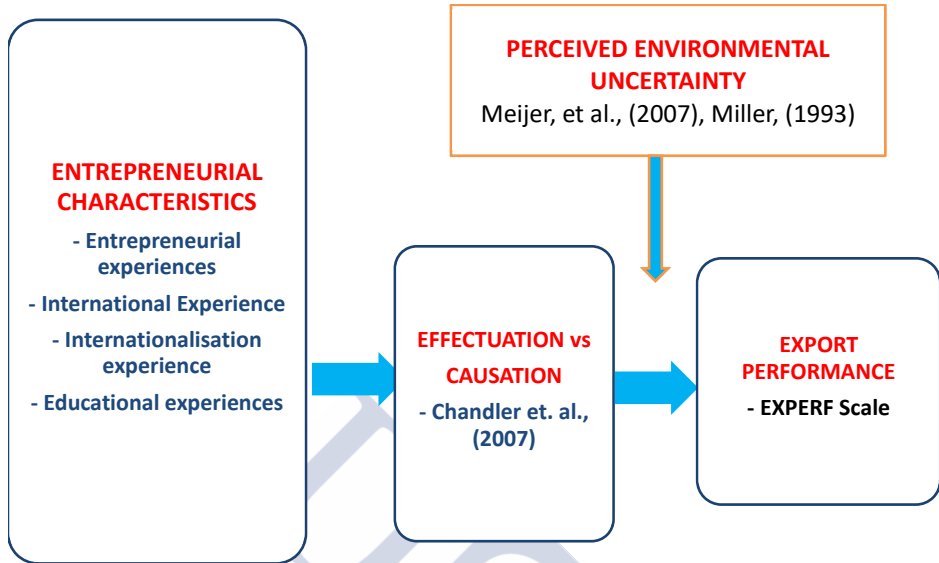
Consumer uncertainty - relates to uncertainty about consumers preferences with respect to the product, uncertainty about consumers' characteristics and, in general, uncertainty about the long-term development of the demand over time.

Political uncertainty – is about exporting country's regimes and policies, about effect of policies.

Perceived environmental uncertainty (Dimitratos et al., 2004) results from inability of individual managers to predict changes in the environment (resulting from changes in technology, markets, and income volatility), due to lack of information or knowledge necessary to distinguish data needed for decision-making (Andersen, 2006). Stated in Matanda & Freeman (2009) the uncertainties increase diverse skills and knowledge of the firm and more resources are acquired to develop solutions and remain competitive. Complementary resources are an outcome of the combination of the resources of partnering firms, and when inter-organisational resources turn to capabilities they are used in the marketplace to create a competitive advantage. Exporters use networking, inter-organisational relationships and strategic alliances as tools to overcome barriers and manage uncertainty in export markets (Bradley et al., 2006). Since Effectuation is effective in reducing the perceived environmental uncertainty by employing affordable loss, networking, partnering, creating new means with new stakeholders, the following is proposed:

H4: *The positive relationship between the Effectual logic and Export Performance is more intense when the Perceived Environmental Uncertainties are higher.*

Figure 1: The Conceptual Framework of the study



3.8 Methodology

This study employed a survey design. Studies that are based on Effectuation theory often used case study method or other types of research designs. Therefore using a survey design is a contribution to this area. Survey methodology gives more control over the research process as it makes use of a questionnaire in which the data can be standardised allowing for easy comparison (Saunders et al., 2003). The data was gathered using interviewer administered questionnaire. The interviewer explained carefully each of the questions asked and recorded the answers in a structured way. Therefore it was possible to minimize the distortions in understanding the questions by entrepreneurs as well as in filling the responses in. Questionnaire included questions related to demographic data, latent variables and control variables. Overall it consisted of thirty six main questions and additional demographic questions, control questions and other sub-questions within some main questions related to latent variables. Twelve sub-questions refer to effectuation construct, four items refer to causation, fourteen items refer to perceived environmental uncertainties (PEU), and six items refer to the construct that measure export performance. Questions related to PEU and export

performance constructs adopted 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), while questions related to effectuation and causation constructs adopted 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Measurement models

Thorough literature review on measurement of each construct has been conducted and we carefully selected measurement scales suitable for the purposes of this study. Constructs effectuation and causation have been measured using scale developed by Chandler, DeTienne, Mumford (2007) published in their article “Causation and Effectuation: Measurement Development and Validation”. Questions of effectuation were based on its five principles: Experimentation, Affordable loss, Flexibility, Pre-commitment, Partnering, Focus on resources. Since the original questions were designed for start-up process, we adapted them for the export activity process. The latent construct of causation consists of four questions and these were also adapted using the export activity process terminology (see Appendix 3).

The measurement scale for the latent variable of perceived environmental uncertainties were adapted from Duncan (1972), Milliken (1987), Dickson & Weaver (1997). These authors conceptualize uncertainty as a multidimensional construct and, therefore, emphasize that it is important to identify the different sources of uncertainty. The perceived uncertainty is comprised of different uncertainty sources. We grouped these sources into two groups: uncertainties of own country and uncertainties of exporting country (see Appendix 3).

The latent construct of Export Performance is measured using EXPERF scale developed by Zou, Taylor, Osland (1998). The scale offered by these authors consists of three parts: Financial Export Performance, Strategic Export Performance, Satisfaction with Export Venture. Each of these parts consists of three relevant questions. We decided not to use the Strategic Export Performance related questions due to the lack of long-term strategy building in entrepreneurial activities by performing businesses in transition economies. (Aidis, 2003; Roberts & Tholen, 1998; Meyer & Bytchkova, 2005). Questions related to EXPERF scale included information about Financial Export Performance and Satisfaction with Export Venture. (see Appendix 3)

Characteristics of export entrepreneurs that are: Entrepreneurial experience, International experience, Internationalisation experiences were assessed based on how many years were spent for each of these activities. Educational experience was assessed based on the type of academic level received by the entrepreneur.

We used control variables that might have an effect on the relationship between entrepreneurial characteristics and entrepreneur's selected logic. These control variables are: entrepreneur's age, the type of exporting country, the type of the product exported (raw material vs. produced product), the percentage of the export sales to total sales, the size of a company, the type of customers in export (consumers vs. industries), the type of countries in export (transition vs. developed).

Sample selection

The companies with exporting activities were identified through the Chamber of Commerce and Industry in Uzbekistan. 150 companies were contacted from Uzbekistan's capital Tashkent and the cities of Namangan, Andijan, Fergana. These are the districts where we had an access to the companies. Respondents in a smaller firms were entrepreneurs who started the corresponding business, and in the bigger organizations those were managers responsible for export activity and were the main decision makers in export department.

We have sent initial seven questionnaires for pre-testing and after making modifications we started the main survey process. Questionnaires were filled by the interviewer in selected exporting companies.

103 respondents returned usable questionnaires. The remaining questionnaires were incomplete and therefore excluded from the final sample. The final number of questionnaires formed 67 percent of response rate. The eventual sample size was adequate for the main data analysis method used: Partial Least Square Pant Modeling (PLS-PM) (see Chin and Newsted, 1999). We contacted the participants throughout the year 2014.

3.8.1 PLS Method of Analyses

Data analysis was performed using Partial Least Squares (PLS), a structural equation modeling technique that uses a principal-component-based estimation approach (Chin 1998). We applied partial least squares path modeling (PLS-PM) in R program (Sanchez, 2013) to test the hypotheses. The R program allows the use of moderators and the implementation of both reflective and formative scales (Sanchez, 2013). PLS-PM doesn't impose any distributional assumptions on the data. In contrast, in using covariance-based SEM approach it is assumed that the data is generated by some "true" theoretical model and therefore in fitting a model there is a concern to reproduce the observed covariances. Therefore it is based on a heavy use of distributional assumptions about the behavior and personality of the data (Sanchez, 2013).

PLS-PM treats the data as a dataset and it does not rely on a data-generation process and causal-modeling interpretations. The goal in PLS-PM is to provide a practical summary of how the set of dependent variables are systematically explained by their sets of predictors. In addition PLS-PM allows working with small sample sizes. (Chin & Newsted, 1999)

PLS-PM is a structural equation modeling (SEM) technique that can simultaneously test the measurement model (relationships between indicators and their corresponding latent variables) and the structural model (relationships between constructs). (Garthwaite 1994; Barclay et al. 1995) In PLS-PM, the relationship between a construct and its indicators can be modeled as either formative or reflective, which is an advantage compared to the covariance based methods. We measured the latent variables using both reflective and formative indicators.

The difference is that reflective measures are expected to have high inter-correlations. This is what one usually tests with exploratory or confirmatory factor analysis. Also, the very common Cronbach's alpha measures unidimensionality of a scale by inter-correlations. The measure can literally be said to "reflect" the latent variable. In this study the latent variables Causation and Export Performance are reflective measures.

The latent variables that measure Effectuation and PEU are considered as formative multidimensional construct with its associated sub-dimensions. Each sub-dimension is measured by a multi-item scale. (Chandler, et.al.,2009; Newbert, 2015) Since formative measures are not expected to correlate, the individual components of Effectuation and PEU constructs are not highly correlated with each other.

Reflective indicators are a function of their associated latent variable:

$$x_i = \lambda_i \eta + \varepsilon_i$$

η : latent variable; λ : loading; x : reflective indicator;

ε : measurement error on level of indicators

Formative indicators influence the latent variable:

$$\eta = \gamma_1 y_1 + \gamma_2 y_2 + \gamma_3 y_3 + \dots + \gamma_n y_n + \zeta.$$

η : latent variable; γ : weight (parameter reflecting the contribution of y_i to the latent variable η);

y : formative indicator; ζ : disturbance term, the measurement error on level of the latent variable

The objective of this study is to see the effect of Effectual or Causal logics on Export Performance of a firm in different levels of Perceived Environmental Uncertainties and for this PLS is suitable since it is intended for causal-predictive analysis in situations of high complexity but low theoretical information. (Jöreskog & Wold, 1982)

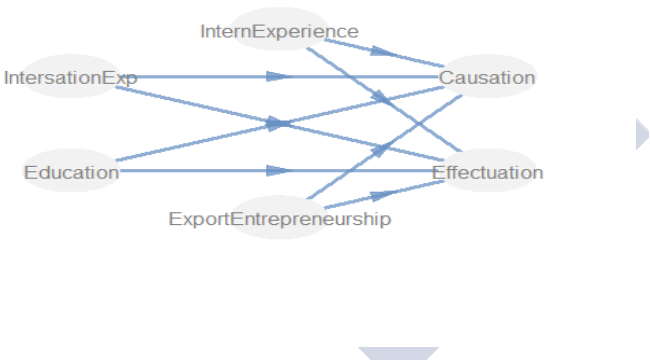
Several conditions are required to evaluate the appropriateness of PLS compared to its covariance-based counterpart, which can be classified into four groups: theoretical conditions, measurement conditions, distributional conditions, and practical conditions (Falk & Miller 1992). PLS could be used when there is no strong existing theory, and hypotheses are derived from a macro-level theory in which all relevant variables are not known, relationships between constructs are conjectural, some of the manifest variables are categorical and they

may have some degree of unreliability, distribution of the data may not be normal, sample size is very large or small, and a large number of manifest and latent variables are modeled (Falk and Miller 1992). After a systematic review of all these conditions, it was decided that PLS path modeling was the most appropriate technique for this study.

3.9 Results

The impact of the level of Entrepreneurial Experience, International Experience, Internationalisation Experience, Education level on the choice of Effectual versus Causal logic by Uzbekistan’s exporting entrepreneurs were assessed by using path analysis method in R.

Figure 2: Entrepreneurial Experiences towards Effectuation vs. Causation



The relationship coefficients between characteristics of entrepreneurs and their effectual and causal logics are listed below

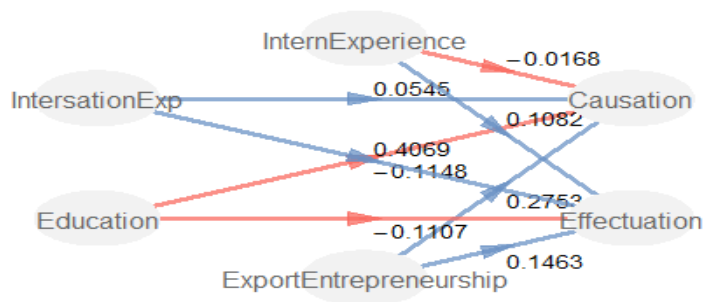
	InternExperience	IntersationExp	Education
InternExperience	0.0000000	0.0000000	0.0000000
IntersationExp	0.0000000	0.0000000	0.0000000
Education	0.0000000	0.0000000	0.0000000
ExportEntrepreneurship	0.0000000	0.0000000	0.0000000
Effectuation	0.10823312	0.40689996	-0.1107066
Causation	-0.01683601	0.05451675	-0.1148230

	ExportEntrepreneurship	Effectuation	Causation
InternExperience	0.0000000	0	0
IntersationExp	0.0000000	0	0
Education	0.0000000	0	0
ExportEntrepreneurship	0.0000000	0	0
Effectuation	0.1462717	0	0
Causation	0.2753141	0	0

Each of these coefficients were checked for significance level using bootstrapping method. Additionally, the relationship between each of the entrepreneurial characteristic and effectuation/causation was checked to see whether the control variables (entrepreneur's age, the type of exporting country, type of the product exported,, the percentage of the export sales to total sales, the size of a company, the type of a customers in the export country, the type of export countries) have an effect on these relationships by using Resampling approach of the group comparison method. In turn group comparisons were checked for significance of differences between the groups by using Bootstrap t-test.

Bootstrap t-test re-sampling approach for comparing groups involves using a t-test based on bootstrap re-samples. The procedure consists of separating the data into groups and then running bootstrap samples with replacement for each group. Path coefficients are calculated in each re-sampling and the standard error estimates are treated in a parametric sense via a t - test.

Figure 3: Path coefficients for the effect of Entrepreneurial Characteristics on Entrepreneurial logic



As you can see from the path diagram, Entrepreneurs' International Experience (InternExperience) has a positive effect on Effectuation but it has a negative effect on the Causation. On the other hand, Internationalisation (IntersationExp) experience has positive coefficients on both Causation and Effectuation. In turn, the Entrepreneurship Experience (ExportEntrepreneurship) in exporting has also a positive effect on both Causation and Effectuation. In contrast, the Education level has a negative effect on the use of both Causation and Effectuation. To assess how relevant these results are we should check the bootstrapped path coefficients:

```
> mimic_pls$boot$paths
```

	Original	Mean.Boot	Std.Error	perc.025	perc.975
InternExperience -> Effectuation	0.10823312	0.129482989	0.17619904	-0.3636946	0.3720764
InternExperience -> Causation	-0.01683601	-0.012729112	0.10746456	-0.1700401	0.2368810
IntersationExp -> Effectuation	0.40689996	0.209163975	0.28907483	-0.4182963	0.5488785
IntersationExp -> Causation	0.05451675	-0.008921771	0.11466158	-0.2181523	0.1886221
Education -> Effectuation	-0.11070659	-0.107761436	0.19957466	-0.3872649	0.3037481
Education -> Causation	-0.11482301	-0.121397813	0.09016903	-0.2965568	0.0446549
ExportEntrepreneurship -> Effectuation	0.14627167	0.164741680	0.16931927	-0.3126618	0.3880394
ExportEntrepreneurship -> Causation	0.27531414	0.287906849	0.08664378	0.1173205	0.4513276

It turns out that the effects of International Experience, Internationalisation Experience, Education on both Effectuation and Causation are not that important since its bootstrap confidence interval contains the zero.

Entrepreneurship Experience in exporting has also insignificant effect on Effectuation but its effect on Causation is significant since its path coefficients are significantly different from zero. Which means the more experience has the entrepreneur in exporting the causation is used. These results confirm our Hypothesis 1 that is there is no impact of the level of Entrepreneurial Experience, International Experience, Internationalisation Experience, Education level on the choice of Effectual logic over Causal logic by Uzbekistan's exporting entrepreneurs.

R^2 for the relationship of characteristics with Effectuation is high enough while the same indicator for the relationship with Causation is low and does not meet Falk & Miller's (1992) rule. Falk & Miller (1992) suggest that the variance explained, or R^2s , for endogenous variables should be greater than 0.1. This is also consistent with our proposition in the first chapter of this thesis that there is a limited possibility to implement causation in the country

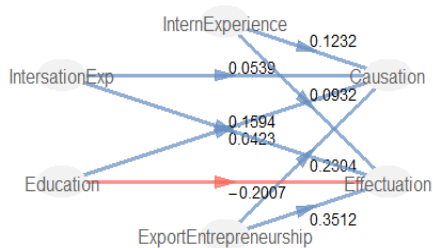
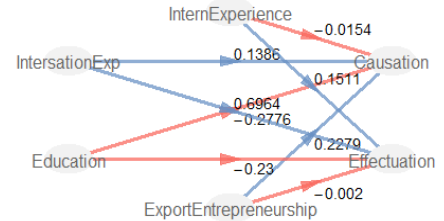
with a transition economy, therefore the use of this logic cannot be consistent with any of the given entrepreneurial characteristics.

```
> mimic_pls$inner_summary[, "R2", drop = FALSE]
      R2
InternExperience      0.00000000
InternationalisationExp 0.00000000
Education             0.00000000
ExportEntrepreneurship 0.00000000
Effectuation          0.26806377
Causation              0.09003039
```

The relationship between the Entrepreneurial characteristics and the choice of both Effectuation and Causation logics might have been effected by some other factors such as, entrepreneur's age, the type of exporting country, type of the product exported (raw material vs. produced product), the percentage of the export sales to total sales, the size of a company, the type of a customers in export (consumers vs. industries), the type of countries in export (transition vs. developed). Thus we perform Resampling approach of the group comparison method for each control variable.

To assess the effect of Entrepreneur's age on the relationship between Entrepreneurial characteristics and Entrepreneurial logic, the next step is to calculate PLS Path Models separately for younger aged sample and older aged sample. PLS-PM comes with the function `plspm.groups` that allows us to apply the bootstrap approach to compare groups in PLS Path Modeling. Group must be a categorical variable (codified as an R factor) with two levels indicating the groups to be compared.

The impact of the Age on the relationship between Entrepreneurial Characteristics and Entrepreneurial logic

Figure 4: Path coefficients for older and younger entrepreneurs*Entrepreneurial age group from 0 to 45**Age group from 46 and older*

Numerically, we have different path coefficients between both models. In order to assess how different the path coefficients really are we need to perform some group comparison analysis to get a verdict.

Comparing Age Groups: Bootstrap t-test

```
> mimic_boot
```

GROUP COMPARISON IN PLS-PM FOR PATH COEFFICIENTS

Scale of Data: TRUE
 Weighting Scheme: centroid
 Selected method: bootstrap
 Num of replicates: 1000

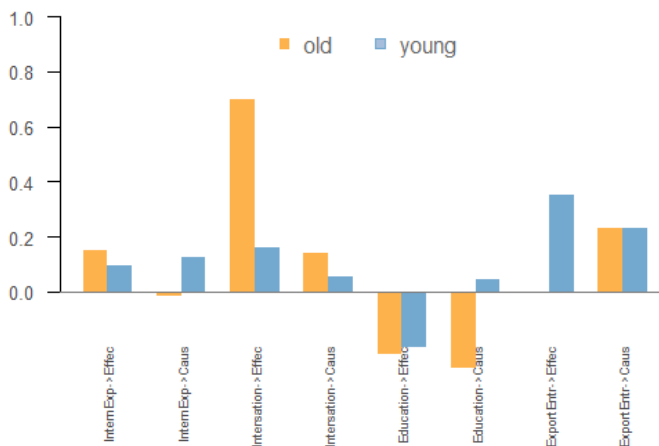
\$test

	global	group.L	group.M	diff.abs	t.stat	deg.fr
InternExperience->Effectuation	0.1082	0.1511	0.0932	0.0579	0.1663	101
InternExperience->Causation	-0.0168	-0.0154	0.1232	0.1386	0.3548	101
IntersationExp->Effectuation	0.4069	0.6964	0.1594	0.5370	0.3683	101
IntersationExp->Causation	0.0545	0.1386	0.0539	0.0847	0.0287	101
Education->Effectuation	-0.1107	-0.2300	-0.2007	0.0293	0.0034	101
Education->Causation	-0.1148	-0.2776	0.0423	0.3200	1.9100	101
ExportEntrepreneurship->Effectuation	0.1463	-0.0020	0.3512	0.3533	0.9081	101
ExportEntrepreneurship->Causation	0.2753	0.2279	0.2304	0.0026	0.0929	101
	p.value	sig.05				
InternExperience->Effectuation	0.4341	no				
InternExperience->Causation	0.3617	no				
IntersationExp->Effectuation	0.3567	no				
IntersationExp->Causation	0.4886	no				
Education->Effectuation	0.4987	no				
Education->Causation	0.0295	yes				
ExportEntrepreneurship->Effectuation	0.1830	no				
ExportEntrepreneurship->Causation	0.4631	no				

The first part of the output is a description with specified parameters: scaled and scheme belong to the arguments specified in pls; the method and the replicates belong to the selected

approaches and the number of resamples. The second part is the data frame contained in \$test. The first column global shows the path coefficients of the global model; the second and third columns show the path coefficients of the compared groups (Younger & Older, respectively). The fourth column diff.abs is the absolute difference of path coefficients between younger and older entrepreneurs. Then we have the columns t.stat, deg.fr, and p.value that contain the statistic of the t-test with its degrees of freedom and the associated p-value. The last column sig.05 is an auxiliary label to indicate whether the difference in path coefficients is significant at the 5% level. As we can see from the obtained results, only Education to Causation path coefficients between younger and older entrepreneurs are significantly different. In the younger generation the more educated the entrepreneurs are the more causal in their decisions. However, in the older aged generation the more educated entrepreneurs are less causal. This difference is shown as significant in bootstrap analysis. Other characteristics are not significantly different in their effects -on entrepreneurial logic between younger and older generations.

Path coefficients of young and old entrepreneurs

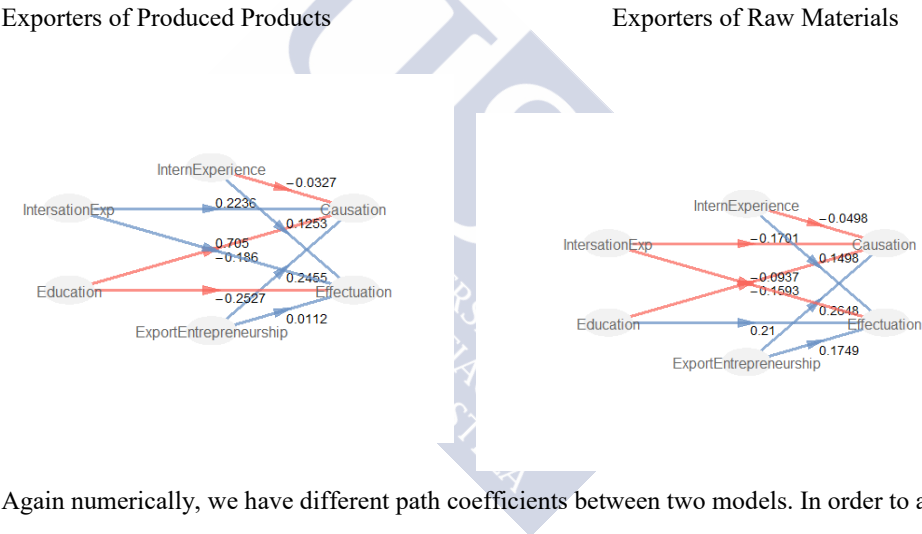


Below the same steps of groups comparisons are done for the effects of all other control variables.

The impact of the Type of the Product on the relationship between Entrepreneurial Characteristics and Entrepreneurial logic

During the survey process we discovered that the participating companies export one of two types of products, produced products and raw materials such as cotton wool etc. Therefore we thought that this might effect to the type of decisions made. While raw materials are easier to process and sell, the produced products should be customized more based on the tastes and therefore better marketing strategies might be needed. Thus we divided all the respondent companies into two groups: 1- production companies; 2 – raw materials processors. Below we analysed the effect of this control variable.

Figure 5: Path coefficients for Produced Products Exporters and Raw Materials Exporters



Again numerically, we have different path coefficients between two models. In order to assess how different the path coefficients, we perform group comparison analysis to get a verdict.

Comparing Exported Products Groups: Bootstrap t-test

GROUP COMPARISON IN PLS-PM FOR PATH COEFFICIENTS

Scale of Data: TRUE
Weighting Scheme: centroid
Selected method: bootstrap
Num of replicates: 1000

\$test

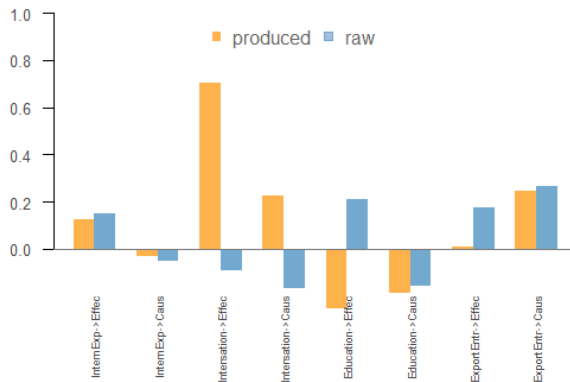
	global	group.0	group.1	diff.abs	t.stat	deg.fr
InternExperience->Effectuation	0.1082	0.1253	0.1498	0.0245	0.5678	101
InternExperience->Causation	-0.0168	-0.0327	-0.0498	0.0171	0.2265	101
IntersationExp->Effectuation	0.4069	0.7050	-0.0937	0.7987	1.5072	101
IntersationExp->Causation	0.0545	0.2236	-0.1701	0.3937	1.3948	101
Education->Effectuation	-0.1107	-0.2527	0.2100	0.4628	0.6656	101
Education->Causation	-0.1148	-0.1860	-0.1593	0.0267	0.1241	101

The Role Of The Entrepreneurial Logic In Export Performance

ExportEntrepreneurship->Effectuation	0.1463	0.0112	0.1749	0.1638	0.1474	101
ExportEntrepreneurship->Causation	0.2753	0.2455	0.2648	0.0193	0.0871	101
	p.value	sig.05				
InternExperience->Effectuation	0.2857	no				
InternExperience->Causation	0.4106	no				
IntersationExp->Effectuation	0.0674	no				
IntersationExp->Causation	0.0831	no				
Education->Effectuation	0.2536	no				
Education->Causation	0.4508	no				
ExportEntrepreneurship->Effectuation	0.4416	no				
ExportEntrepreneurship->Causation	0.4654	no				

As it is seen from Bootstrap analysis none of the characteristics are significantly different in their effects on entrepreneurial logic between Produced Product Exporters and Raw Materials Exporters.

Path coefficients of Produced products and Raw materials exporters



The impact of the Size of the Company on the relationship between Entrepreneurial Characteristics and Entrepreneurial logic

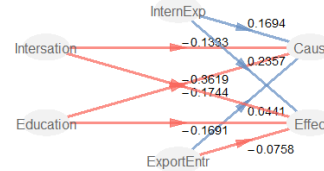
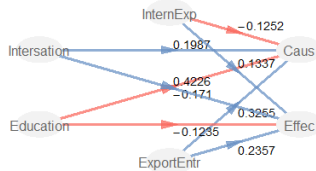
It is well-known fact that the decisions made in small businesses and large businesses are different in terms of their scope, spending, formality. Large companies take the planning process seriously in order to stay ahead of competitors, while small companies usually prepare a business plan because potential investors request it. Large companies often have much more data available to assist with the planning process than small companies have, and in large companies, most managers are involved in the creation of the annual plan, while the plan in a small company may be the work of just the company owner and several other key

staff members. Therefore we thought that the size of a company might have an effect on the relationship between Entrepreneurial Characteristics and the chosen Entrepreneurial Logic.

Figure 6: Path coefficients for bigger and smaller companies

Small companies (up to 50 employees)

Large companies (more than 50 employees)



According to graphs there are some differences between Small and Large companies in terms of their effect on the relationship between Entrepreneurial Characteristics and Entrepreneurial Logic. We will check whether they are significant with Bootstrap test.

Comparing Size Groups: Bootstrap t-test

GROUP COMPARISON IN PLS-PM FOR PATH COEFFICIENTS

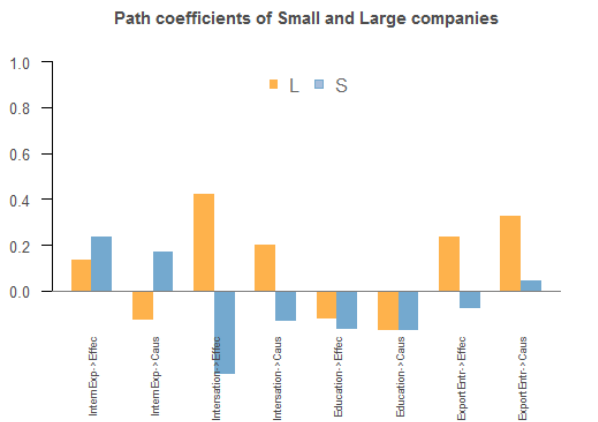
Scale of Data: TRUE
Weighting Scheme: centroid
Selected method: bootstrap
Num of replicates: 400

\$test

	global	group.L	group.S	diff.abs	t.stat	deg.fr
InternExperience->Effectuation	0.1082	0.1337	0.2357	0.1020	0.4294	101
InternExperience->Causation	-0.0168	-0.1252	0.1694	0.2946	1.0246	101
IntersationExp->Effectuation	0.4069	0.4226	-0.3619	0.7844	4.5097	101
IntersationExp->Causation	0.0545	0.1987	-0.1333	0.3321	1.9748	101
Education->Effectuation	-0.1107	-0.1235	-0.1691	0.0455	0.0933	101
Education->Causation	-0.1148	-0.1710	-0.1744	0.0034	0.0943	101
ExportEntrepreneurship->Effectuation	0.1463	0.2357	-0.0758	0.3115	1.4667	101
ExportEntrepreneurship->Causation	0.2753	0.3255	0.0441	0.2814	1.7267	101
	p.value	sig.05				
InternExperience->Effectuation	0.3343	no				
InternExperience->Causation	0.1540	no				
IntersationExp->Effectuation	0.0000	yes				
IntersationExp->Causation	0.0255	yes				
Education->Effectuation	0.4629	no				
Education->Causation	0.4625	no				
ExportEntrepreneurship->Effectuation	0.0728	no				
ExportEntrepreneurship->Causation	0.0436	yes				

Bootstrap Test confirms the differences in the relationship between Entrepreneur's Internationalization experience and the choice for Effectuation and Causation, and

Entrepreneurial export experience to Causation. It shows that in the small companies entrepreneurs with less previous internationalization experience use more effectuation and more causation and vice versa. While in the large companies entrepreneurs with more previous internationalization experiences use more of effectuation as well as causation logics. (other age categories also were compared and no difference has been revealed between the groups). The graph demonstration of these path coefficients in the diagram below.



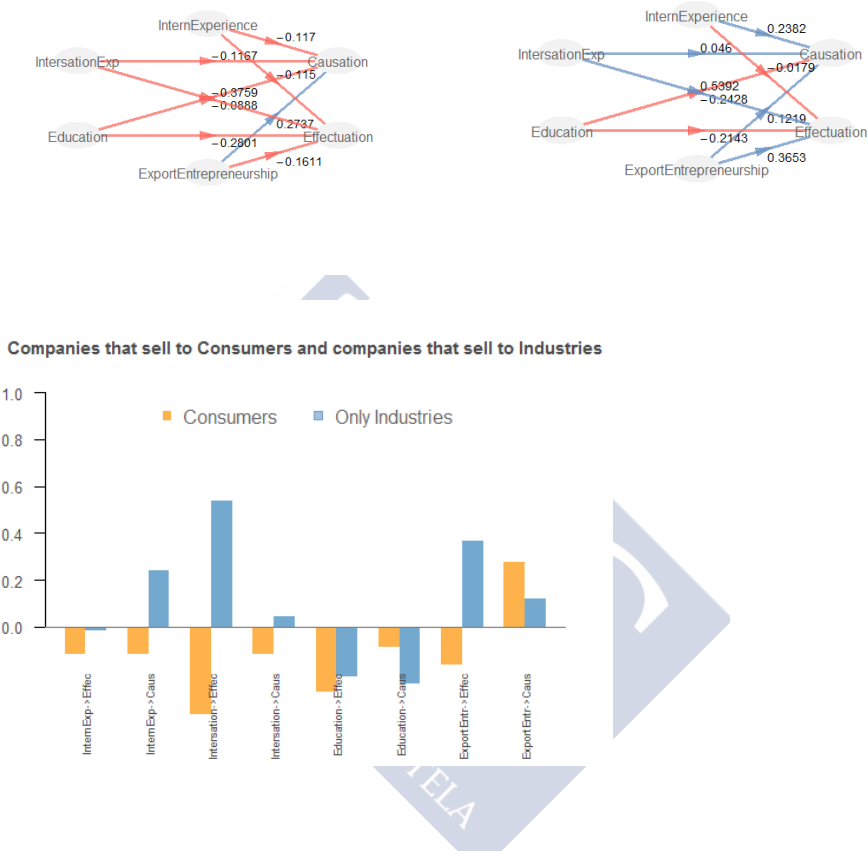
The impact of the Type of Export Customer on the relationship between Entrepreneurial Characteristics and the Entrepreneurial Logic

The companies in our sample sell to Consumers and also sell to Industries. Some of them sell to both consumers and industries. We are going to analyse whether selling to Consumers is different from selling to Industries in terms of entrepreneurial logic. We are comparing companies that sell to consumers and sometimes to industries with companies that sell exclusively to industries. We cannot compare three groups at the same time due to the requirements of a Bootstrap Test. We only can divide companies into two groups for the comparison. We needed to see whether the type of a customer has an effect on the relationship between Entrepreneurial characteristics and Entrepreneurial Logic.

Figure 7: Path coefficients for companies that sell to Consumers and that sell to Industries

Sell to Consumers and Industries

Sell to only Industries



Paths in the graphs demonstrate different coefficients. Now we need to check the significance of these differences by using Bootstrap Test.

GROUP COMPARISON IN PLS-PM FOR PATH COEFFICIENTS

Scale of Data: TRUE
weighting Scheme: centroid
Selected method: bootstrap
Num of replicates: 1000

\$test	global	group.0	group.1	diff.abs	t.stat	deg.fr
InternExperience->Effectuation	0.1082	-0.1150	-0.0179	0.0971	0.2248	101
InternExperience->Causation	-0.0168	-0.1170	0.2382	0.3552	1.1411	101
IntersationExp->Effectuation	0.4069	-0.3759	0.5392	0.9151	1.0616	101
IntersationExp->Causation	0.0545	-0.1167	0.0460	0.1626	0.0230	101
Education->Effectuation	-0.1107	-0.2801	-0.2143	0.0659	0.0912	101

Education->Causation	-0.1148	-0.0888	-0.2428	0.1540	0.9598	101
ExportEntrepreneurship->Effectuation	0.1463	-0.1611	0.3653	0.5264	1.0064	101
ExportEntrepreneurship->Causation	0.2753	0.2737	0.1219	0.1518	0.6216	101
	p.value	sig.05				
InternExperience->Effectuation	0.4113	no				
InternExperience->Causation	0.1283	no				
IntersationExp->Effectuation	0.1455	no				
IntersationExp->Causation	0.4909	no				
Education->Effectuation	0.4637	no				
Education->Causation	0.1697	no				
ExportEntrepreneurship->Effectuation	0.1583	no				
ExportEntrepreneurship->Causation	0.2678	no				

Based on the test results there is no difference between these two groups.

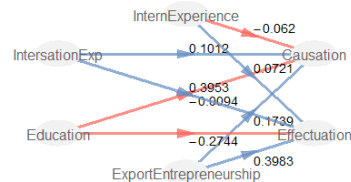
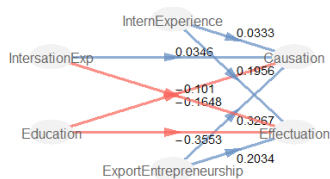
The impact of a Percentage of Export Sales from the Total Sales on the relationship between Entrepreneurial Characteristics and Entrepreneurial logic

Since we are concerned with decisions taken during export activities, it is also important to know how much dedicated the company for its exporting activities. There should be difference in decision style between the companies that export only small amount of their products and the companies that dedicated their business mostly on exporting activities. Therefore below we are comparing these two groups.

Figure 8. Path coefficients for companies with bigger share of export sales and smaller share of export sales

Export sales up to 50% of total sales

Export sales 50% + of total sales



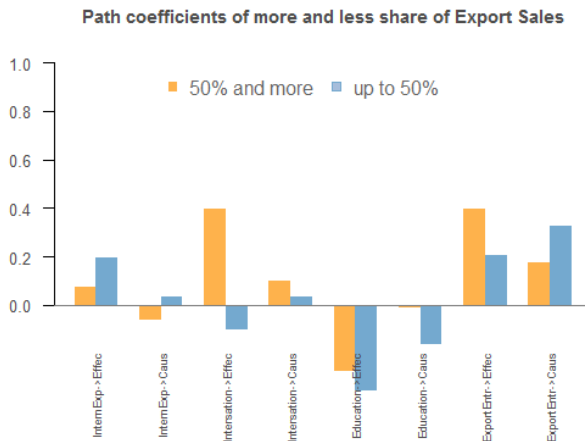
Comparing Export Sales Size Groups: Bootstrap t-test

GROUP COMPARISON IN PLS-PM FOR PATH COEFFICIENTS

Scale of Data: TRUE
 weighting Scheme: centroid
 Selected method: bootstrap
 Num of replicates: 900

\$test	global	group.LARGE	group.SMALL	diff.abs	t.stat
InternExperience->Effectuation	0.1082	0.0721	0.1956	0.1235	0.0140
InternExperience->Causation	-0.0168	-0.0620	0.0333	0.0953	0.0205
IntersationExp->Effectuation	0.4069	0.3953	-0.1010	0.4963	0.9389
IntersationExp->Causation	0.0545	0.1012	0.0346	0.0666	0.0038
Education->Effectuation	-0.1107	-0.2744	-0.3553	0.0809	0.6444
Education->Causation	-0.1148	-0.0094	-0.1648	0.1554	0.6833
ExportEntrepreneurship->Effectuation	0.1463	0.3983	0.2034	0.1949	0.1130
ExportEntrepreneurship->Causation	0.2753	0.1739	0.3267	0.1528	0.8601
	deg.fr	p.value	sig.05		
InternExperience->Effectuation	101	0.4944	no		
InternExperience->Causation	101	0.4918	no		
IntersationExp->Effectuation	101	0.1750	no		
IntersationExp->Causation	101	0.4985	no		
Education->Effectuation	101	0.2604	no		
Education->Causation	101	0.2480	no		
ExportEntrepreneurship->Effectuation	101	0.4551	no		
ExportEntrepreneurship->Causation	101	0.1959	no		

Bootstrap Test results show that the difference between these groups is not significant and therefore the size of export sales does not have significant effects on the relationship between Entrepreneurial Characteristics and Entrepreneurial Logic. The different sizes of export share (i.e, up to 30% and 30% plus shares etc.) were also compared through this test and the results were similar.



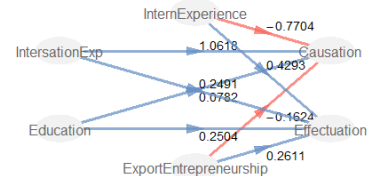
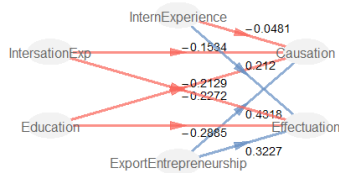
The impact of a Type of Export Country (transition countries vs. mix of developed and transition countries) on the relationship between Entrepreneurial Characteristics and Entrepreneurial logic

In developed countries there is usually much competition and therefore customers have many alternatives to buy. Thus to sell to developed countries demand a better marketing, better quality of products and a better logistics comparing to selling to a less developed economies. In our sample the companies sell either to the countries from the former Soviet Union due to easy communication without language barriers or they sell to developed countries. Based on this fact we divided the respondents into two groups, see Figure 13

Figure 9: Path coefficients for different types of export countries

Exporting to only transition countries

Exporting to both developed and transition countries



Comparing Size Groups: Bootstrap t-test

GROUP COMPARISON IN PLS-PM FOR PATH COEFFICIENTS

Scale of Data: TRUE
Weighting Scheme: centroid
Selected method: bootstrap
Num of replicates: 500

\$test

	global	group.0	group.1	diff.abs	t.stat	deg.fr
InternExperience->Effectuation	0.1082	0.2120	0.4293	0.2173	0.3000	101
InternExperience->Causation	-0.0168	-0.0481	-0.7704	0.7222	0.8023	101
InternationalisationExp->Effectuation	0.4069	-0.2129	0.2491	0.4620	0.9661	101
InternationalisationExp->Causation	0.0545	-0.1534	1.0618	1.2152	1.5648	101
Education->Effectuation	-0.1107	-0.2885	0.2504	0.5388	1.4567	101
Education->Causation	-0.1148	-0.2272	0.0782	0.3054	1.0902	101
ExportEntrepreneurship->Effectuation	0.1463	0.3227	0.2611	0.0616	1.5374	101
ExportEntrepreneurship->Causation	0.2753	0.4318	-0.1624	0.5942	3.3585	101
	p.value	sig.05				

InternExperience->Effectuation	0.3824	no
InternExperience->Causation	0.2121	no
InternationalisationExp->Effectuation	0.1681	no
InternationalisationExp->Causation	0.0604	no
Education->Effectuation	0.0742	no
Education->Causation	0.1391	no
ExportEntrepreneurship->Effectuation	0.0637	no
ExportEntrepreneurship->Causation	0.0006	yes

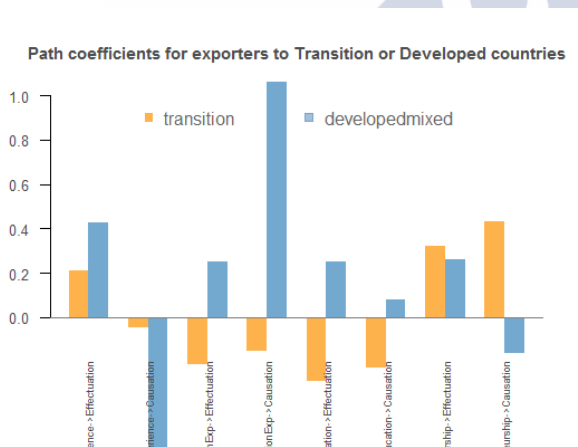
Inner models in the following objects:

\$global

\$group1

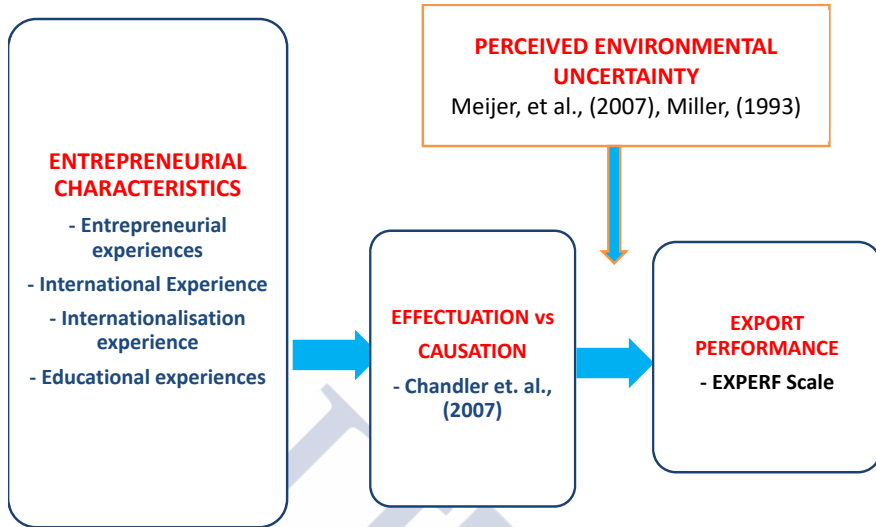
\$group2

According to Bootstrap Test the only path that has generated significant difference is Export related entrepreneurship experience and the use of Causal Logic. Which means that there is less use of causation in the companies that export to both developed and transition countries with previous entrepreneurial experiences. However Bootstrap analysis process also revealed that the data on these groups is not balanced enough and therefore the results from Bootstrap analysis is not reliable enough. Which means that the number of companies in one of the groups is not enough to be compared with companies in the other group.



The next part of this study is the main part where we intend to find out whether Effectual logic brings to a better Export Performance and whether the level of Environmental Uncertainties accelerate this process. (figure 15)

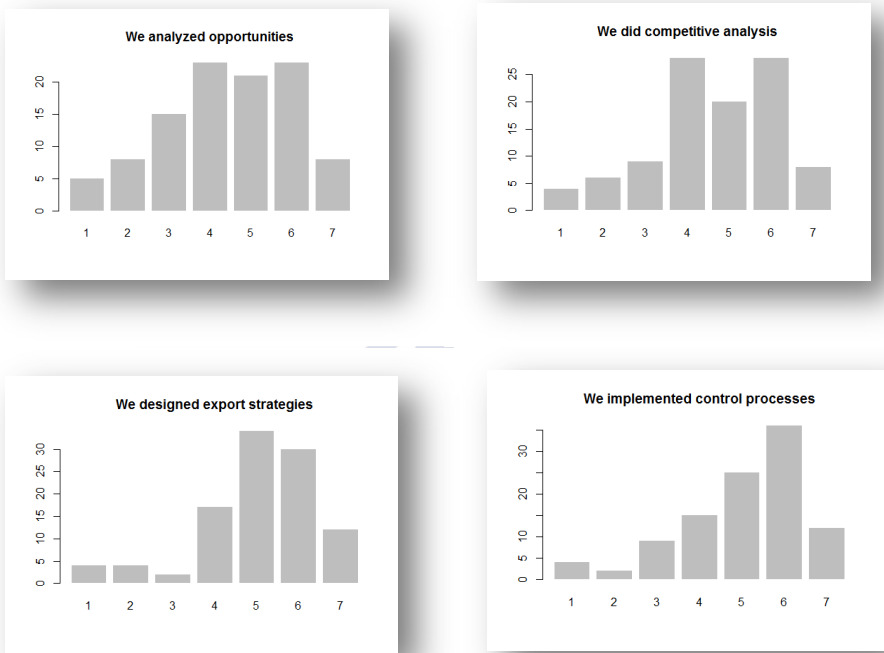
Figure 10: Theoretical Framework



As it was stated in the methodology part we have both formative and reflective types of latent variable. In a reflective construct, the indicators are caused by the latent variable, and therefore the reflective measures are expected to have high inter-correlations. While in a formative construct the indicators cause the construct and they are not expected to correlate. Our measure of Causation is a well-defined, reflective, uni-dimensional construct and the Effectuation is a formative, multidimensional construct (Chandler, et. al., 2009). The latent variable Perceived Environmental Uncertainties is also formative, which has several dimensions with its sub-indicators measuring perceptions of uncertainties which come from different sources. The construct Export Performance is a reflective measure. This is confirmed in the study of Export Performance measurements of Diamantopoulos (1999), where based on confirmatory factor analysis (via EQS) and internal consistency analysis (via Cronbach's alpha) confirms that the nine-item EXPERF scale by Zou et al. (1998) is reflective in nature.

Before the start of the presentation of the structural equations modeling part we need to examine the data related to the latent variables in general. We first look at the bar charts of the Causation construct, in figure 11

Figure 11: Responds related to the Causation construct

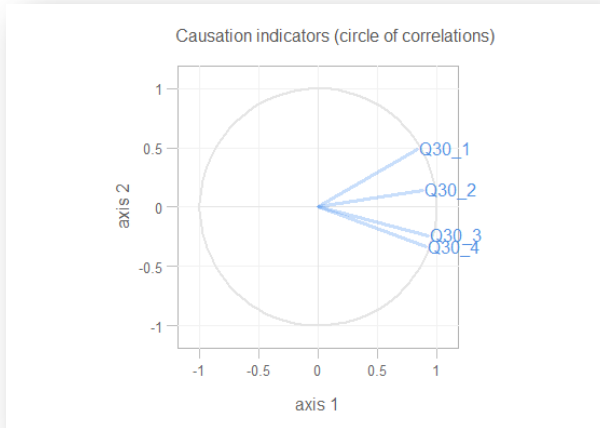


Causation is a reflective construct and we find a good correlation between its indicators:

```
cor(eff.df[,84:87])
      Q30_1    Q30_2    Q30_3    Q30_4
Q30_1 1.0000000 0.6985334 0.6777551 0.6258637
Q30_2 0.6985334 1.0000000 0.7453203 0.7118803
Q30_3 0.6777551 0.7453203 1.0000000 0.8813055
Q30_4 0.6258637 0.7118803 0.8813055 1.0000000
```

Jointly with the correlations, we also use a Principal Component Analysis (PCA) in an attempt to appreciate the systematic patterns in the data that are hard to see with the naked eye.

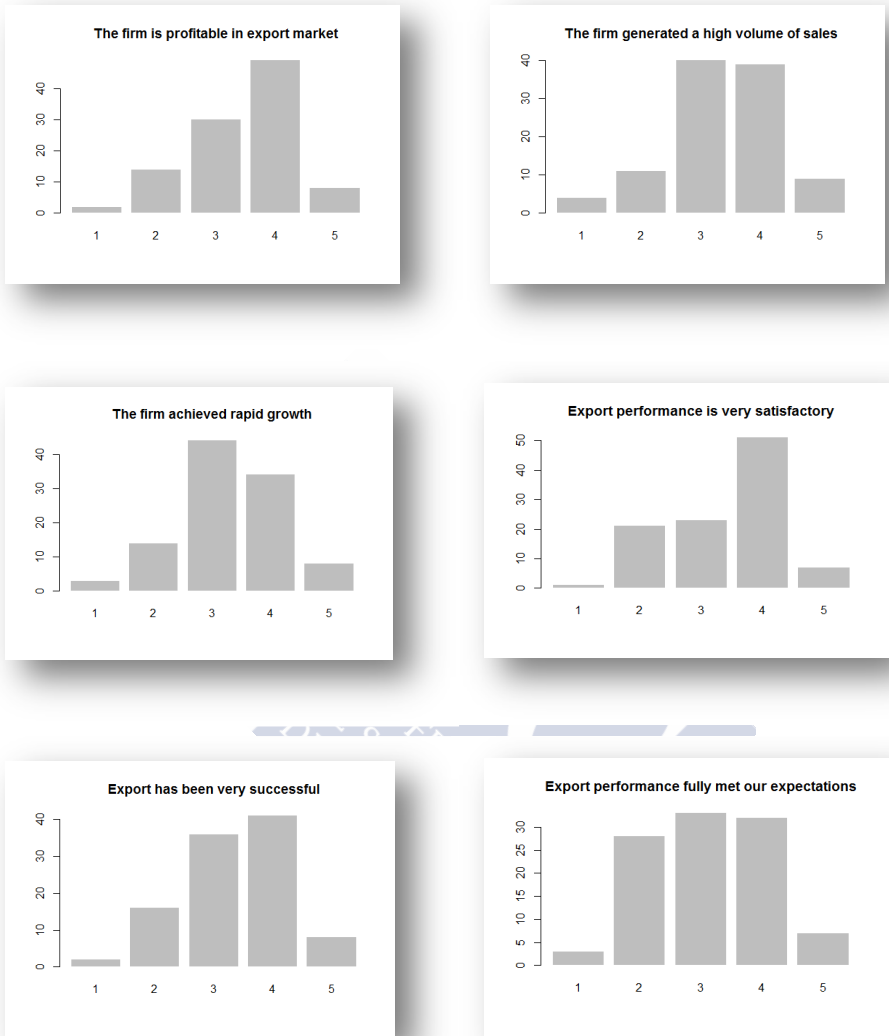
PCA for the Causation construct



This graphic is known as a circle of correlations and is a representation of the variable correlations on the first two principal axes associated with the first two principal components. All the indicators of the construct causation are somewhat clustered on the right. This means that all the indicators are positively correlated with each other. If we pay attention to the barplots associated with causation, we see a clear pattern: the distributions are skewed to the right, which means that respondents consider causal logic very often. Although they might consider that they are using causal techniques in their management, we also needed to check whether they understood properly what the questions meant in reality. We had to include some control questions that would check how causal have been the entrepreneurs in reality. The reason for this is not because we did not trust to entrepreneurs, but that we thought entrepreneurs are not aware of what the processes of export strategy, competitive analysis in the export country, opportunity analysis, control processes that meet strategic objectives are. While we admit the fact that entrepreneurs might employ high level professionals to pursue these steps, based on our discussions, in the first chapter of the thesis, there is a very limited possibility to use causation logic in the transition economies environment, thus we have doubts in the perceptions of entrepreneurs about what causation questions mean (the control questions will be presented later in the presentation of findings).

Similarly, we explore the reflective construct for Export Performance.

Figure 12: PCA for the Export Performance construct

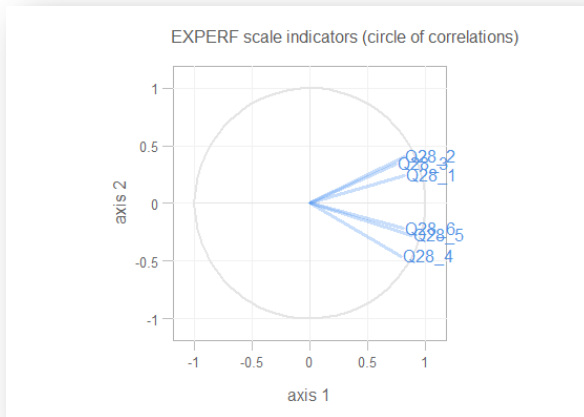


The barplots show that the most of the firms are performing well in their exporting. Below table shows correlations between the indicators of the latent variable

	Q28_1	Q28_2	Q28_3	Q28_4	Q28_5	Q28_6
Q28_1	1.0000000	0.7279314	0.5134583	0.5326615	0.6307668	0.5968800
Q28_2	0.7279314	1.0000000	0.6067617	0.4976224	0.6100056	0.5322399
Q28_3	0.5134583	0.6067617	1.0000000	0.4558206	0.5656492	0.5242899
Q28_4	0.5326615	0.4976224	0.4558206	1.0000000	0.7612010	0.5954126
Q28_5	0.6307668	0.6100056	0.5656492	0.7612010	1.0000000	0.7120401
Q28_6	0.5968800	0.5322399	0.5242899	0.5954126	0.7120401	1.0000000

As it is seen there is a high correlation between the indicators both in the table and in Principal Component Analysis below.

PCA for the EXPERF scale



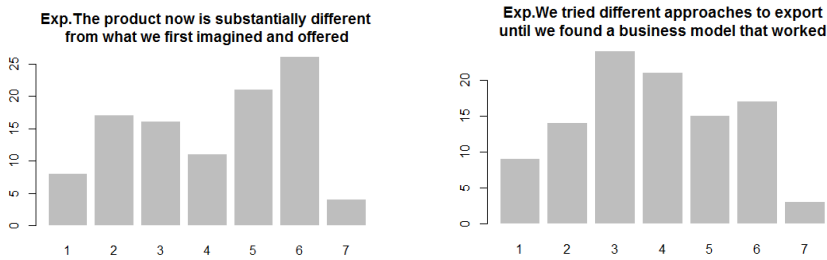
It is clearly seen two clusters that belong to two separate parts of the EXPERF scale: Financial Export Performance and Satisfaction with Export Venture that highly correlate with each other.

Other two constructs, Effectuation and Perceived Environmental Uncertainties are formative, therefore we are not concerned with the correlation of their indicators. However, it is interesting to see the distribution of responses for each indicator in these latent variables.

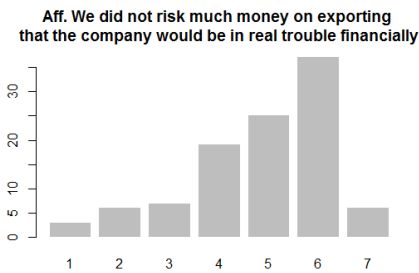
The construct Effectuation has its sub-constructs that in turn have their own indicators. For example the sub-construct Experimentation has its two indicators and etc.

Figure 13: Distribution of manifest variables of Effectuation

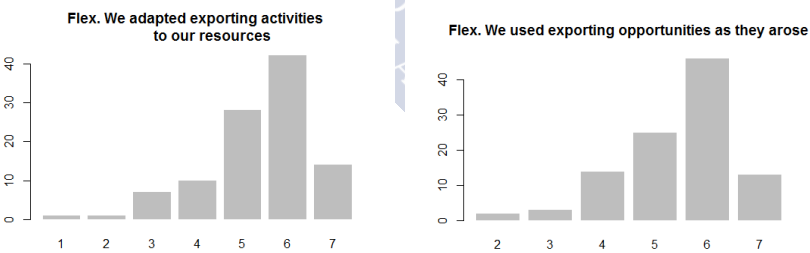
Effectuation principle: Experimentation

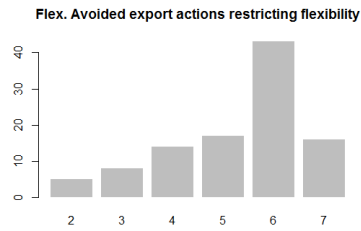


Effectuation principle: Affordable loss

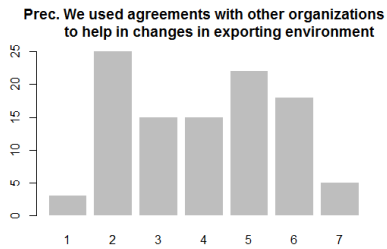
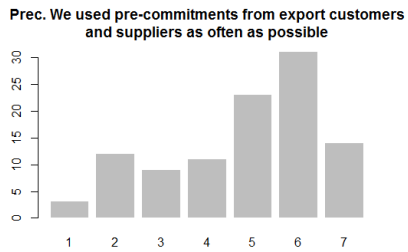
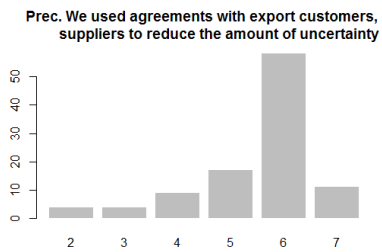


Effectuation principle: Flexibility

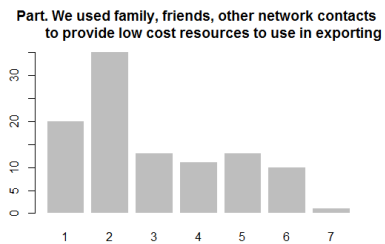




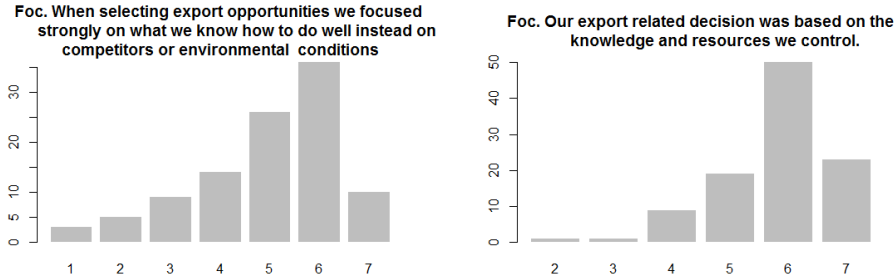
Effectuation principle: Pre-commitments



Effectuation principle: Partnering



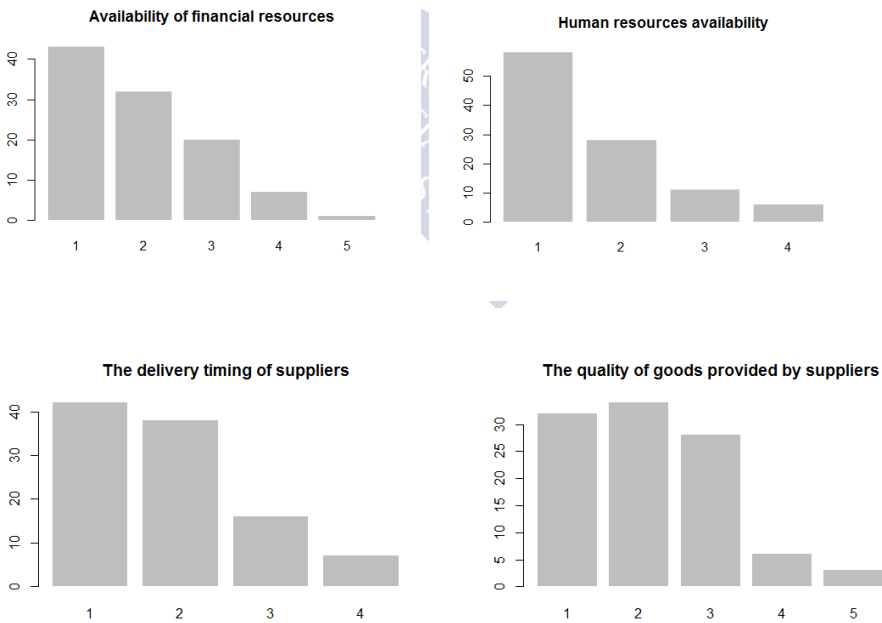
Effectuation principle: Focus on resources



The distribution of the indicators of the latent construct Perceived Environmental Uncertainties (PEU) are presented below.

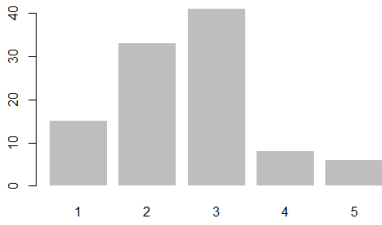
Figure 14: Distribution of manifest variables of PEU. The graphs show the perceived

The graphs show the perceived level of danger to a firm created by these sources of uncertainties. The presented levels demonstrate the impact of each uncertainty to a business. (1- is low uncertainty, 5- is high uncertainty)

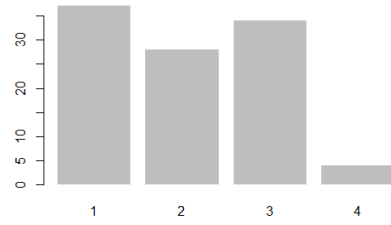


The Role Of The Entrepreneurial Logic In Export Performance

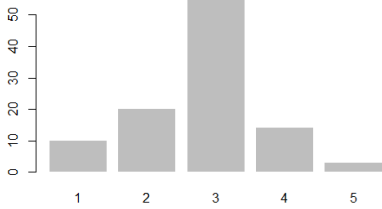
The price changes in goods provided by suppliers



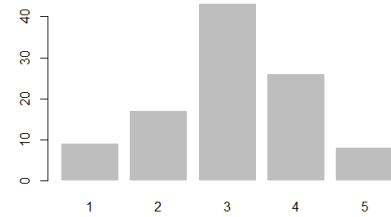
Governmental regulations



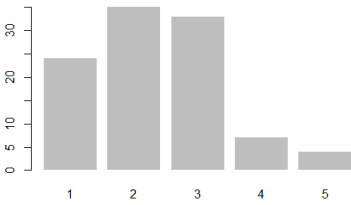
Rates of inflation



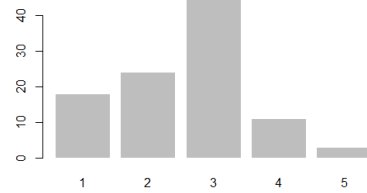
The exchange rate with dollar



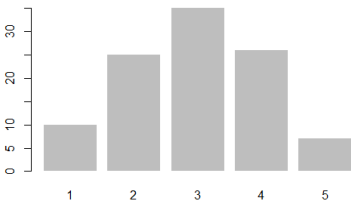
Preferences of customers



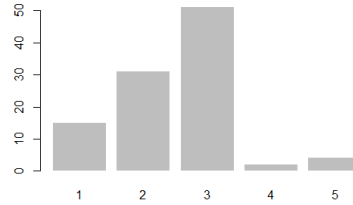
Interest rates



Actions of competitors



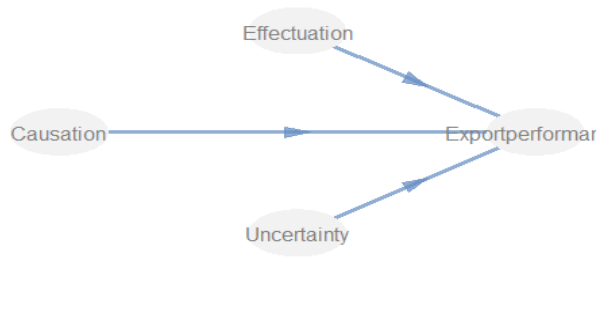
Export country's governmental regulations



The graphs show most entrepreneurs perceive that uncertainties are not very high in any category. Rather they are moderate.

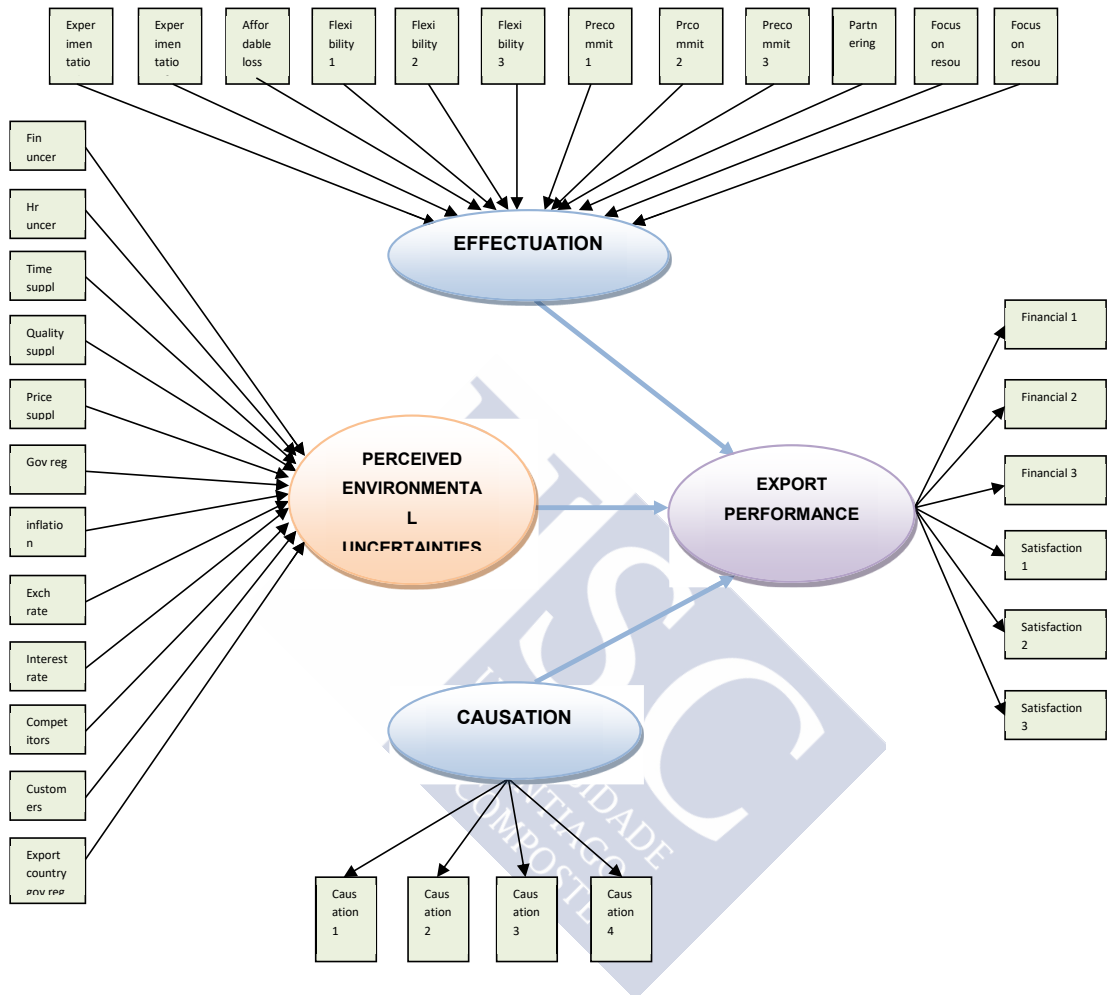
Since we saw that the data looks acceptable, we start with our PLS path modeling part. We display our model in a graphical format using what is called a path diagram this is why is called PLS path modeling. While perceived environmental uncertainties may interact and change the strength of these relationships, for the beginning we just see how uncertainties are related to export performance:

Figure 15: The main structural model



In the following diagram below, the arrows that are directed towards a latent variable show the formative indicators, and arrows that are directed from the latent variable towards indicators reflect the latent variable and therefore they demonstrate reflective latent variables.

Figure 16: Formative and Reflective Constructs



A full path model is comprised by two sub-models: the structural model also known as inner model and the measurement model also known as outer model. The inner model is the part of the model that has to do with the relationships between latent variables. The outer model is the part of the model that is the relationships between each latent variable and its block of indicators. See figures 17 and 18

Figure 17: Inner model

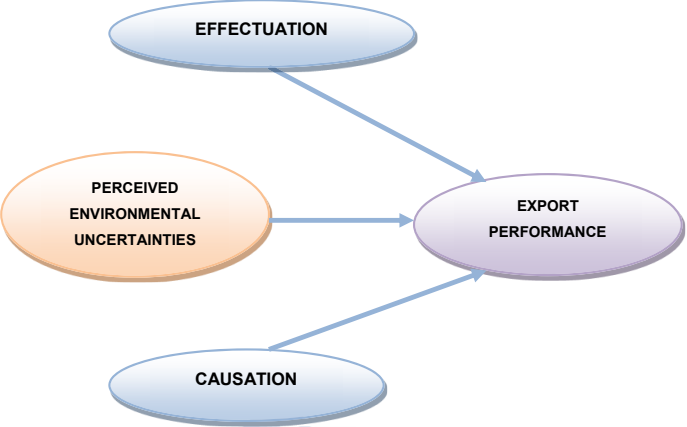
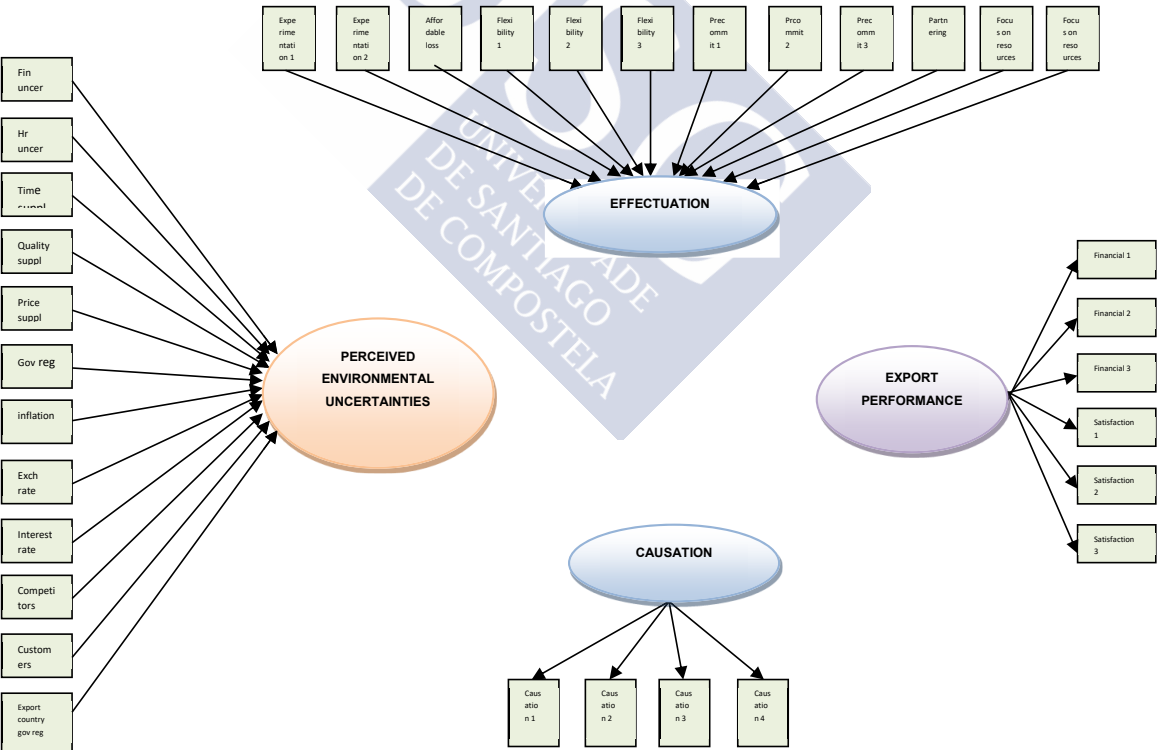
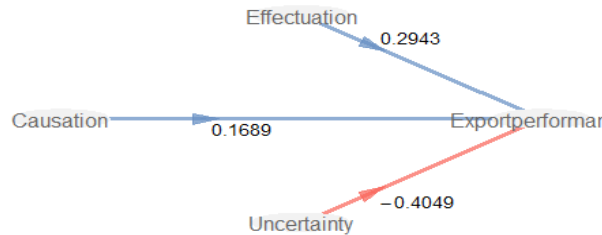


Figure 18: Outer model



Model 1 We start evaluating the structural results by taking path coefficients:

Figure 19: Path coefficients



Path coefficients in matrix:

```
> effect_pls$path_coefs
```

	Effectuation	Causation	Uncertainty	Exportperformance
Effectuation	0.0000000	0.0000000	0.0000000	0
Causation	0.0000000	0.0000000	0.0000000	0
Uncertainty	0.0000000	0.0000000	0.0000000	0
Exportperformance	0.2943331	0.1688895	-0.4048718	0

These results coincide with what we expected.

After computing the path estimates in the structural model, a bootstrap analysis was performed to assess the statistical significance of the path coefficients.

```
$total.efs
```

	Original	Mean.Boot	Std.Error	perc.025	perc.975
Effectuation -> Causation	0.0000000	0.0000000	0.00000000	0.000000000	0.0000000
Effectuation -> Uncertainty	0.0000000	0.0000000	0.00000000	0.000000000	0.0000000
Effectuation -> Exportperformance	0.2943360	0.3504200	0.09279293	0.170987442	0.5200003
Causation -> Uncertainty	0.0000000	0.0000000	0.00000000	0.000000000	0.0000000
Causation -> Exportperformance	0.1688962	0.1474660	0.06845573	0.008153071	0.2746683
Uncertainty -> Exportperformance	-0.4048698	-0.4431934	0.07429426	-0.587893451	-0.2891094

According to the Bootstrap analysis table (where we ran 5000 re-samples), the coefficients of Effectuation -> Exportperformance; Causation -> Exportperformance; Uncertainty -> Exportperformance are significant since the confidence intervals (perc.025; perc.975) do not contain zero.

The structural model represents the relationships between constructs or latent variables that were hypothesized in the research model. Since the primary objective of PLS is prediction, the goodness of a theoretical model is established by the strength of each structural path and the combined predictiveness- R^2 of its exogenous constructs (Chin 1998). We review the regression results of the endogenous construct.

```
$Exportperformance
      Estimate Std. Error      t value      Pr(>|t|)
Intercept  2.564775e-17  0.07654519  3.350668e-16  1.000000e+00
Effectuation 2.943331e-01  0.08407630  3.500785e+00  6.972370e-04
Causation   1.688895e-01  0.08445960  1.999648e+00  4.827838e-02
Uncertainty -4.048718e-01  0.08123168 -4.984161e+00  2.649348e-06
```

```
> effect_pls$inner_summary
      Type      R2 Block_Community Mean_Redundancy      AVE
Effectuation Exogenous 0.0000000      0.1849819      0.000000 0.0000000
Causation     Exogenous 0.0000000      0.7934788      0.000000 0.7934788
Uncertainty   Exogenous 0.0000000      0.2991329      0.000000 0.0000000
Exportperformance Endogenous 0.4199426      0.6589616      0.276726 0.6589616
```

Under the PLS-PM standards R^2 more that 0.30 is considered as a good model. In our case R^2 is equal to 0.42 which is acceptable and it is significant based on Bootstrap test:

```
> effect_val$boot$rsq
      Original Mean.Boot Std.Error perc.025 perc.975
Exportperformance 0.4199465  0.539965  0.0651156  0.412399  0.6667223
```

The average communality indicates how much of a reflective block variability is reproducible by the latent variable. On average, we would expect to have at least 50% of communality in a reflective block. In our case both of our reflective latent variables have average communality equal to 0.79 and 0.66 and this is also acceptable.

The next column Mean.Redun is the average redundancy which reflects the ability of the independent reflective latent variables to explain the average variation of the indicators in the dependent latent variable. In our case this indicator is not complete since only one of the three independent variables are reflective and other two are formative.

The last column AVE is the Average Variance Extracted which measures the amount of variance that a reflective latent variable captures from its indicators in relation to the amount of variance due to measurement error. As a rule of thumb, the AVE should be greater than 0.50 which means that 50% or more of the indicator's variance is accounted for.


```
> effect_pls$gof
[1] 0.3997361
```

The GoF is a Goodness of fit measure that accounts for the model quality at both the measurement and the structural models. GoF is calculated as the geometric mean of the average communality and the average R² value. Since it takes in to account communality, this index is more applicable to reflective indicators than to formative indicators. However, it is also possible to use the GoF index in presence of formative blocks, however more importance will be given to the average R².

GoF helps to evaluate the performance of the model in both the inner and the outer models. Basically, GoF assesses the overall prediction performance of the model. The main drawback with the GoF index is that there is no threshold that allows to determine its statistical significance. Unfortunately, there is also no guidance about what number could be considered a good GoF value. The rule of thumb is: the higher, the better.

In the structural part there is no problem in this model and all the coefficients appear as we have been expecting. Additionally, we need to check the measurement part of the model (outer model).

Unidimensionality of Reflective Blocks

For our two reflective indicators we must check the unidimensionality of the blocks. Unidimensionality implies that the reflective indicators must be in a geometrical space of one dimension since the manifest variables in a reflective block are considered as being caused by their latent variable. In PLS-PM we have checked three main indices of unidimensionality: 1) the Cronbach's alpha, 2) the Dillon-Goldstein's rho, and 3) the first eigenvalue of the MVs correlation matrix.

Checking unidimensionality

```
> effect_pls$unidim
```

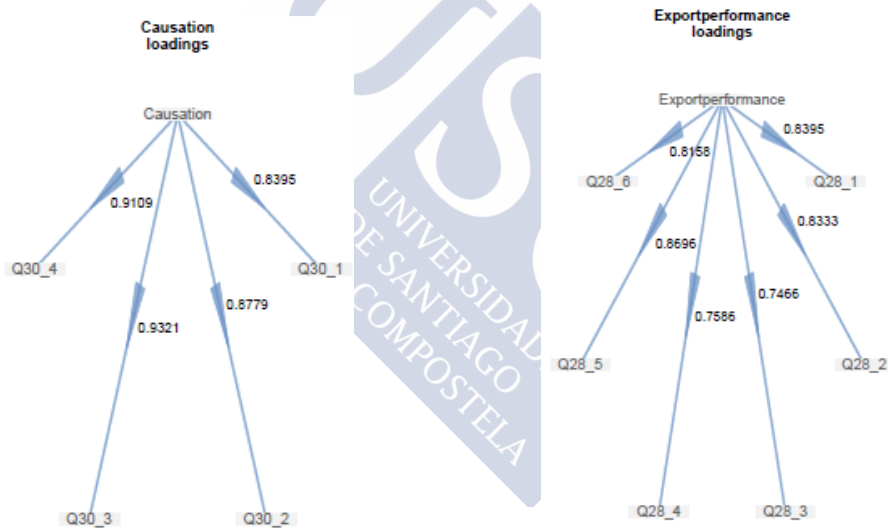
	Mode	MVs	C.alpha	DG.rho	eig.1st	eig.2nd
Effectuation	B	12	0.0000000	0.0000000	3.538162	1.4385416
Causation	A	4	0.9127671	0.9388868	3.174720	0.4314311
Uncertainty	B	12	0.0000000	0.0000000	5.021149	1.4150318
Exportperformance	A	6	0.8965288	0.9209390	3.963701	0.6801806

In the first column named Mode the letter “A” indicates the reflective indicators and a letter ‘B’ means formative indicators.

Looking at the table, both of the reflective blocks have acceptable values (greater than 0.7) for the Cronbach's alpha and Dillon-Goldstein's rho. The first Eigen value should be more than 1 the second Eigen value should be less than 1. In our case this criteria is met perfectly.

For constructs with reflective measures, it’s also necessary to examine the loadings, which can be interpreted in the same manner as the loadings in a principal component analysis. By examining the loadings of the measures with the construct we evaluate the individual item reliability. The figure 27 visualizes the loadings.

Figure 20: Loadings for reflective constructs



Besides plotting the loadings, we do a more careful inspection by checking the results contained in \$outer model:

```
subset(effect_pls$outer_model, block == "Causation")
  name      block      weight      loading      communality      redundancy
13 Q30_1 Causation 0.2773993 0.8394516 0.7046790 0
14 Q30_2 Causation 0.2538957 0.8778646 0.7706462 0
15 Q30_3 Causation 0.2881983 0.9321005 0.8688113 0
16 Q30_4 Causation 0.3025736 0.9109218 0.8297786 0

> subset(effect_pls$outer_model, block == "Exportperformance")
  name      block      weight      loading      communality      redundancy
29 Q28_1 Exportperformance 0.2345021 0.8394764 0.7047207 0.2959422
30 Q28_2 Exportperformance 0.2348823 0.8332972 0.6943843 0.2916015
31 Q28_3 Exportperformance 0.1854705 0.7466425 0.5574750 0.2341075
32 Q28_4 Exportperformance 0.1428800 0.7586061 0.5754832 0.2416699
33 Q28_5 Exportperformance 0.2074442 0.8695515 0.7561198 0.3175269
34 Q28_6 Exportperformance 0.2208301 0.8158350 0.6655867 0.2795082
```

Acceptable values for the loadings are values greater than 0.7. Equivalently, communalities values greater than $0.7^2 = 0.49$ are considered as acceptable. Because communalities represent the amount of variability explained by a latent variable, a communality greater than 0.5 means that more than 50% of the variability in an indicator is captured by its latent construct. All the indicators of the causation and export performance constructs have a loading of above the recommended threshold of 0.7, as well as they have a communality well above the recommended threshold 0.5. This shows that our reflective latent variables reach the level of acceptable reliability.

Cross-loadings

After checking the loadings of the reflective indicators with their own latent variables, we continue with inspecting the so-called cross-loadings. That is, the loadings of an indicator with the rest of latent variables. Reflective indicators need to get along with its latent variable; they must show signs of membership and belonging to one and only one latent variable: they need to be loyal to its construct. If one indicator loads higher on another construct, this could be evidence of treason.

```
> subset(effect_pls$crossloadings, block == "Causation")
  name      block      Effectuation      Causation      Uncertainty      Exportperformance
13 Q30_1 Causation 0.2808417 0.8394516 -0.3402204 0.3470836
14 Q30_2 Causation 0.3037506 0.8778646 -0.1964211 0.3176738
15 Q30_3 Causation 0.3527508 0.9321005 -0.2376882 0.3605936
16 Q30_4 Causation 0.3988838 0.9109218 -0.2392314 0.3785800
29 Q28_1 Exportperformance 0.4625525 0.3739869 -0.4377366 0.8394764
30 Q28_2 Exportperformance 0.4096632 0.4434997 -0.4231858 0.8332972
31 Q28_3 Exportperformance 0.3304767 0.2911670 -0.3862040 0.7466425
32 Q28_4 Exportperformance 0.2535673 0.1420540 -0.3807718 0.7586061
33 Q28_5 Exportperformance 0.3732947 0.2847214 -0.4692167 0.8695515
34 Q28_6 Exportperformance 0.3972956 0.3177702 -0.4849040 0.8158350
```

Now it's turn to check for measurement details for our two formative constructs – Effectuation and Perceived Environmental Uncertainties. As formative indicators are not expected to correlate with one another, the traditional measures of validity are not appropriate. Since the construct is viewed as an effect rather than a cause of the item responses, no interdependencies can be assumed among the formative latent variables. For this reason, formative measures cannot be evaluated in the same way of reflective measures; and all the assessment criteria based on the loadings are discarded in the formative measures.

In order to examine the formative indicators, it is important to see the weights corresponding to each indicator. The weights are assessed in terms of their negative/positive sign, the magnitude and the significance. For formative items, the magnitude and significance of the weight indicate the importance of the contribution of the associated latent variable.

> effect_val\$boot\$weights

	Original	Mean.Boot	Std.Error	perc.025	perc.975
Effectuation-Q29_1	0.150741392	0.130437815	0.1953378	-0.26571570	0.49975702
Effectuation-Q29_2	0.091186688	0.070543375	0.20595486	-0.32759128	0.47999338
Effectuation-Q29_3	-0.013219071	-0.001581852	0.22838238	-0.45020813	0.44211313
Effectuation-Q29_4	0.128354174	0.115834491	0.24814171	-0.42129546	0.55187737
Effectuation-Q29_5	0.392376165	0.330003440	0.20415400	-0.10051022	0.71374342
Effectuation-Q29_6	0.026159730	0.012155634	0.24610466	-0.45942066	0.49875673
Effectuation-Q29_7	0.327979923	0.270211884	0.25229309	-0.24881292	0.73661958
Effectuation-Q29_8	-0.103298218	-0.083947881	0.22372369	-0.51892485	0.35561335
Effectuation-Q29_9	-0.009699362	0.012413117	0.20630965	-0.40308927	0.41410818
Effectuation-Q29_10	-0.477122216	-0.379480282	0.16931215	-0.68590226	-0.01848737
Effectuation-Q29_11	0.439893469	0.360584518	0.22226150	-0.07592783	0.78299717
Effectuation-Q29_12	-0.038738239	-0.034783407	0.20932169	-0.46009763	0.36985688
Causation-Q30_1	0.277401491	0.278624058	0.03841487	0.20571502	0.36054832
Causation-Q30_2	0.253894833	0.249681811	0.04292279	0.16237447	0.32295600
Causation-Q30_3	0.288197631	0.289970691	0.03382987	0.22766852	0.35833399
Causation-Q30_4	0.302573087	0.305325672	0.03710261	0.24393644	0.38815871
Uncertainty-Q27_1	0.246846355	0.221210649	0.20720990	-0.18916265	0.61940617
Uncertainty-Q27_2	-0.248432654	-0.223538385	0.20034312	-0.61051157	0.18183007
Uncertainty-Q27_3	0.470864673	0.403161314	0.20253103	-0.01366782	0.78677279
Uncertainty-Q27_4	-0.265974569	-0.202278882	0.18714205	-0.56405441	0.16316096
Uncertainty-Q27_5	0.193155875	0.143223118	0.23287463	-0.30797028	0.56316284
Uncertainty-Q27_6	0.246190965	0.201883846	0.21353026	-0.25260393	0.59491096
Uncertainty-Q27_7	-0.041925638	0.008164799	0.24184631	-0.46961347	0.48048765
Uncertainty-Q27_8	0.161610981	0.116929324	0.18912023	-0.25484592	0.48191709
Uncertainty-Q27_9	0.309381040	0.261759217	0.21000188	-0.16534864	0.65331611
Uncertainty-Q27_10	0.236356583	0.235242902	0.20605736	-0.17052072	0.63159668
Uncertainty-Q27_11	0.431355686	0.379570716	0.24251529	-0.10867175	0.85573068
Uncertainty-Q27_12	-0.462257965	-0.429597680	0.27709684	-0.94582645	0.12304685
Exportperformance-Q28_1	0.234506372	0.231390685	0.02156193	0.19404032	0.27959825
Exportperformance-Q28_2	0.234897655	0.234688403	0.02560221	0.18886279	0.29007555
Exportperformance-Q28_3	0.185487646	0.188036808	0.02465836	0.13861126	0.23582165
Exportperformance-Q28_4	0.142866638	0.151572808	0.02381203	0.09873536	0.19130355
Exportperformance-Q28_5	0.207433688	0.207544287	0.01768444	0.17345872	0.24370247
Exportperformance-Q28_6	0.220818093	0.213097333	0.02163453	0.17109178	0.25823934

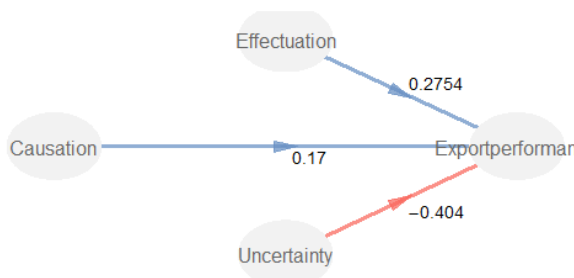
As it is seen, all except one, indicators for weights for Effectuation and PEU are not significant (Eigen value contain zero). Moreover some of the indicators of weight have a negative sign. Two of the indicators in Effectuation are very small, close to zero. These problems appear due to several reasons:

- Too many indicators decrease the weight of the indicator
- Negative weights are the result of the pattern of correlations among the formatively measured construct indicators.

The correlations in Effectuation indicators is essential, because each dimension, Experimentation, Affordable loss, Flexibility, Precommitments, Partnering, Focus on Resources, has several correlated indicators, and if we combine them in one latent variable, and name it formative (where the correlation is not expected much) the indicators will have a multicollinearity. Moreover, there are too many indicators for one variable and therefore the weight magnitudes change to minimal even though their individual weights are high. While collinearity is a threat to the interpretation of individual formative indicators, it is not a threat to the structural effects within the model (Chin 1998b). Culling or failing to include conceptually valid indicators risks changing the nature of the formatively measured construct whereas structural predictive capability of the formatively Even so, we would like to implement some more steps to improve our measurement scale. One of the methods to do so is the model where only one indicator from each dimension of Effectuation is kept and linked to directly Effectuation construct. In doing so we will avoid the correlations between the formatively measured indicators. measured construct is not threatened by collinearity (Cenfetelli & Bassellier, 2009). The path coefficients of a new model are depicted below.

Model 2.

Figure 21: Path Coefficients



```

> effect_pls3$effects
relationships      direct indirect      total
1      Effectuation -> Causation 0.0000000 0 0.0000000
2      Effectuation -> Uncertainty 0.0000000 0 0.0000000
3      Effectuation -> Exportperformance 0.2753505 0 0.2753505
4      Causation -> Uncertainty 0.0000000 0 0.0000000
5      Causation -> Exportperformance 0.1700193 0 0.1700193
6      Uncertainty -> Exportperformance -0.4039986 0 -0.4039986

```

The path coefficients are not different much from the results of the previous model.

The Bootstrap test with 5000 re-samples for significance: All effects are significant

```

$total.efs
      Original Mean.Boot Std.Error      perc.025      perc.975
Effectuation -> Causation 0.0000000 0.0000000 0.00000000 0.00000000 0.00000000
Effectuation -> Uncertainty 0.0000000 0.0000000 0.00000000 0.00000000 0.00000000
Effectuation -> Exportperformance 0.2753429 0.2793234 0.12002612 0.06822056 0.4567831
Causation -> Uncertainty 0.0000000 0.0000000 0.00000000 0.00000000 0.00000000
Causation -> Exportperformance 0.1700119 0.1524609 0.06973497 0.01526109 0.2887175
Uncertainty -> Exportperformance -0.4039982 -0.4725518 0.07324947 -0.61444167 -0.3257007

```

R^2 , AVE, GoF are also similar

```
> effect_pls3$inner_summary
```

```

      Type      R2 Block_Community Mean_Redundancy      AVE
Effectuation Exogenous 0.0000000 0.2457842 0.0000000 0.0000000
Causation Exogenous 0.0000000 0.7934776 0.0000000 0.7934776
Uncertainty Exogenous 0.0000000 0.2990767 0.0000000 0.0000000
Exportperformance Endogenous 0.4091599 0.6590886 0.2696726 0.6590886

```

The coefficient of R^2 is significant

```

> effect_val3$boot$rsq
      Original Mean.Boot Std.Error      perc.025      perc.975
Exportperformance 0.4091527 0.5134218 0.06802451 0.3780243 0.6476055

```

```

> effect_pls3$gof
[1] 0.4220911

```

Unidimensionality of reflective constructs is higher than 0.7 (Alpha, RHO) Eigen values for reflective constructs are good.

```

> effect_pls3$unidim
      Mode MVs C.alpha DG.rho eig.1st eig.2nd
Effectuation B 6 0.0000000 0.0000000 1.950569 1.0322205
Causation A 4 0.9127671 0.9388868 3.174720 0.4314311
Uncertainty B 12 0.0000000 0.0000000 5.021149 1.4150318
Exportperformance A 6 0.8965288 0.9209390 3.963701 0.6801806

```

Loadings for reflective values are higher than 0.7 and the coefficients are significant

```
> effect_val3$boot$loadings
```

	original	Mean.Boot	Std.Error	perc.025	perc.975
Effectuation-Q29_1	0.3331057	0.3014242	0.16862038	-0.026554599	0.6153136
Effectuation-Q29_3	0.2072631	0.1933690	0.19472876	-0.191736619	0.5673857
Effectuation-Q29_5	0.6938140	0.6075198	0.21840255	0.223089719	0.8596237
Effectuation-Q29_7	0.5548974	0.4824357	0.23388279	-0.001950233	0.8238286
Effectuation-Q29_10	-0.3541161	-0.2991760	0.21555707	-0.654206853	0.1826107
Effectuation-Q29_11	0.6373039	0.5565623	0.24276214	0.028666156	0.8949114
Causation-Q30_1	0.8395479	0.8369847	0.03898552	0.749473770	0.9007147
Causation-Q30_2	0.8778742	0.8723337	0.03417979	0.791398805	0.9232209
Causation-Q30_3	0.9320440	0.9307704	0.01837188	0.889051015	0.9582997
Causation-Q30_4	0.9108792	0.9100352	0.01989559	0.863922812	0.9414440
Uncertainty-Q27_1	0.5986039	0.5160198	0.14391008	0.202393562	0.7587212
Uncertainty-Q27_2	0.2679955	0.2311074	0.15457695	-0.079338148	0.5202623
Uncertainty-Q27_3	0.6290047	0.5417414	0.14500703	0.226090049	0.7901796
Uncertainty-Q27_4	0.4053822	0.3451435	0.16601393	-0.011020324	0.6383921
Uncertainty-Q27_5	0.6453047	0.5546646	0.15094901	0.217195385	0.8021486
Uncertainty-Q27_6	0.6800899	0.5854472	0.13486852	0.277178825	0.7952842
Uncertainty-Q27_7	0.4538694	0.3893789	0.17062940	0.020167665	0.6720824
Uncertainty-Q27_8	0.4232831	0.3618308	0.15488211	0.039249666	0.6352186
Uncertainty-Q27_9	0.6258609	0.5379697	0.14162928	0.241918701	0.7851721
Uncertainty-Q27_10	0.5398244	0.4706957	0.16388729	0.116174822	0.7430707
Uncertainty-Q27_11	0.6580869	0.5677005	0.14523021	0.253667081	0.8037554
Uncertainty-Q27_12	0.4674584	0.4037236	0.16121477	0.064110102	0.6908019
Exportperformance-Q28_1	0.8377850	0.8372848	0.02653736	0.777908817	0.8837667
Exportperformance-Q28_2	0.8324620	0.8329368	0.03054559	0.764755081	0.8842866
Exportperformance-Q28_3	0.7474375	0.7454363	0.05994944	0.608432698	0.8430053
Exportperformance-Q28_4	0.7595857	0.7567816	0.06038485	0.622089334	0.8570109
Exportperformance-Q28_5	0.8700502	0.8688642	0.03075595	0.800034933	0.9177830
Exportperformance-Q28_6	0.8167232	0.8128670	0.04349691	0.712265953	0.8832867

Next we examine weights for formative measures: Q29_10 has a negative sign in weights and it is significant, while all other weightings are not significant. In PEU all the weightings are not significant

```
> effect_val3$boot$weights
```

	original	Mean.Boot	Std.Error	perc.025	perc.975
Effectuation-Q29_1	0.20263433	0.175429652	0.17286753	-0.16906146	0.50254019
Effectuation-Q29_3	0.03977153	0.032282114	0.18974245	-0.36032214	0.38295636
Effectuation-Q29_5	0.43786252	0.397279220	0.21271806	-0.06842096	0.76886987
Effectuation-Q29_7	0.29536592	0.264295460	0.23896868	-0.21814835	0.70152797
Effectuation-Q29_10	-0.49707081	-0.429202216	0.16974379	-0.73076430	-0.05479901
Effectuation-Q29_11	0.44020519	0.406021395	0.23421627	-0.04224537	0.84795824
Causation-Q30_1	0.27764488	0.278985378	0.03796335	0.20927781	0.35924660
Causation-Q30_2	0.25390530	0.251057595	0.03945594	0.16602327	0.32378448
Causation-Q30_3	0.28796960	0.287769176	0.03334533	0.22325655	0.35646241
Causation-Q30_4	0.30257201	0.305713363	0.03668270	0.24407035	0.38644274
Uncertainty-Q27_1	0.24605271	0.221845037	0.20820912	-0.19612764	0.61312821
Uncertainty-Q27_2	-0.24813977	-0.228275183	0.19759378	-0.61371306	0.15688944
Uncertainty-Q27_3	0.47025400	0.404996555	0.20382344	-0.01901792	0.79245803
Uncertainty-Q27_4	-0.26525833	-0.203295750	0.18710316	-0.56623445	0.16343075
Uncertainty-Q27_5	0.19320347	0.155002888	0.23385547	-0.32010324	0.57034970
Uncertainty-Q27_6	0.24644600	0.203694398	0.21711545	-0.25823136	0.59589808
Uncertainty-Q27_7	-0.04169061	0.006375348	0.23683152	-0.45592019	0.46655175
Uncertainty-Q27_8	0.16098953	0.113845650	0.18330409	-0.24099651	0.46296357
Uncertainty-Q27_9	0.31159714	0.258370260	0.21707341	-0.19129456	0.65399921
Uncertainty-Q27_10	0.23682559	0.235961661	0.20666452	-0.17942074	0.64176766
Uncertainty-Q27_11	0.43000033	0.369324715	0.24163713	-0.10272394	0.83694985
Uncertainty-Q27_12	-0.46290669	-0.425213232	0.27568557	-0.95439626	0.12159750
Exportperformance-Q28_1	0.23056054	0.229947999	0.02337277	0.18903300	0.28053113
Exportperformance-Q28_2	0.23420925	0.234647610	0.02776412	0.18613072	0.29619407
Exportperformance-Q28_3	0.18700179	0.188590004	0.02387209	0.14119119	0.23630130
Exportperformance-Q28_4	0.14452648	0.150010157	0.02445390	0.09463778	0.19067190
Exportperformance-Q28_5	0.20740981	0.207024768	0.01853028	0.16996985	0.24412016
Exportperformance-Q28_6	0.22267057	0.215864992	0.02275003	0.17437601	0.26598771

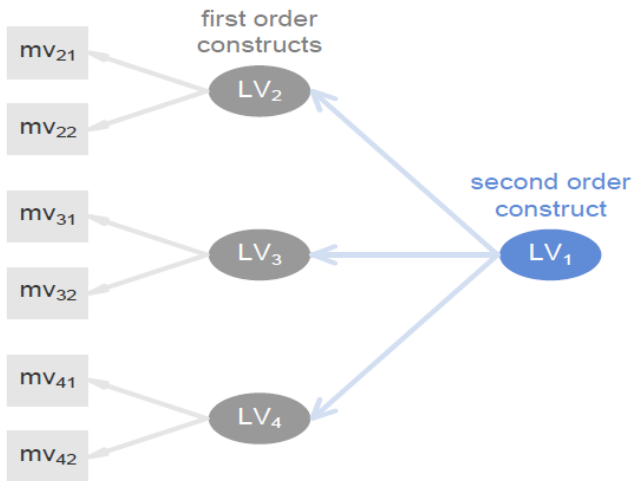
These results prove one more time the notion that PLS structural model estimates hardly alter after performing an elimination of insignificant or highly collinear formative indicators, providing further support for the decision to retain such indicators in the PLS path model (Henseler et al., 2009). In the case of multicollinearity, indicator weight estimates can be distorted. This fact requires to be particularly cautious when interpreting indicator weights as a sign of indicator importance (Henseler et al., 2009).

According to Jarvis et al. (2003) the researcher should keep both significant and insignificant formative indicators in the measurement model as long as this is conceptually justified. Formative indicators should never be discarded simply on the basis of statistical outcomes. Such actions may substantially change the content of the formative index (Jarvis et al., 2003). Keeping in mind the guidance from other authors we decided not to eliminate the indicators that have a correlation from a model, since there was no substantial change in results. By eliminating these indicators we only distort our latent variable. This means we are accepting the first model as a correct one.

However, we decided to continue in reassessing the path analysis by using a different method. One of the solutions is to aggregate similar indicators into different groups and create different dimensions that are related to a single variable (Cenfetelli & Bassellier, 2009). In fact the indicators of Effectuation variable are aggregated into different dimensions such as Experimentation, Affordable loss, Flexibility, Recommitments, Partnering, Focus on Resources. There is an alternative method for PLS path modeling for this type of construct - a Higher Order Construct Modeling.

Model 3 PLS Path Models with Higher-Order Constructs

Graphically, a higher-order construct is typically represented as a latent variable that has no indicators, like in the following diagram. LV₁ is the higher-order construct while LV₂, LV₃ and LV₄ are the lower-order constructs.



There are three approaches that we can use when working with hierarchical models:

Repeated Indicators Approach

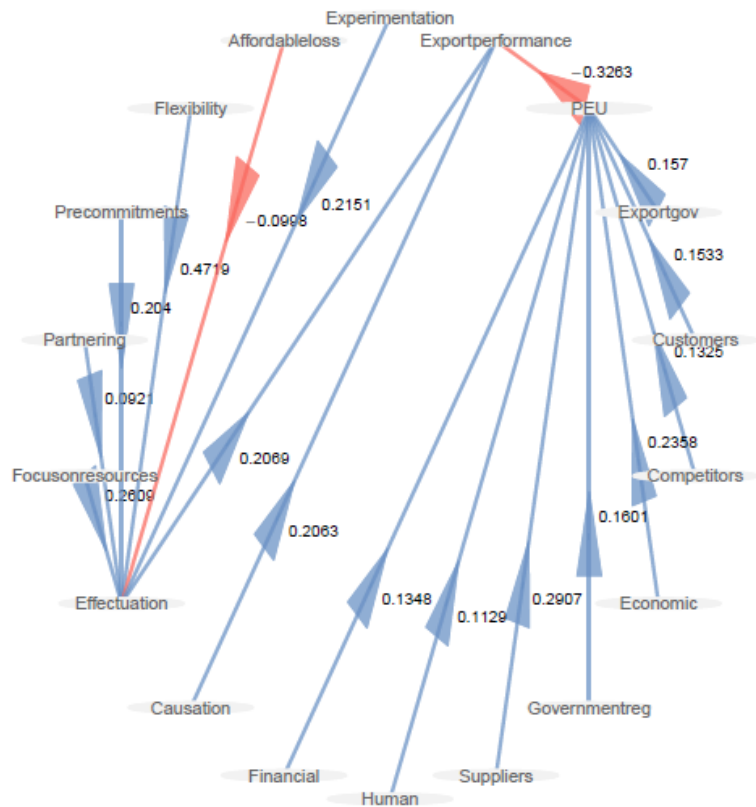
Two-Step Approach

Hybrid Approach

We investigated our model with each method and all the methods have generated similar results (with minor changes in coefficients). We are going to present our findings using a Hybrid Approach. The idea behind this approach is to randomly split the manifest variables (indicators) of the lower-order constructs so that half are assigned to their respective construct and the other half are assigned to the higher-order construct.

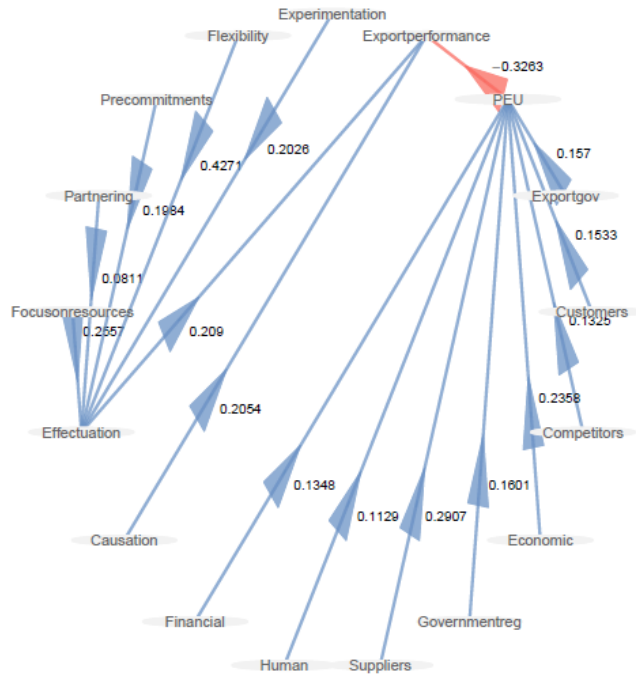
The following are the results from this method:

Figure 22: Path Coefficients



In this case, the effect of Effectuation is reduced noticeably and it is equal to the effect of Causation. (The case of causation is different, based on our specific control variables, this will be discussed later). The Affordable loss dimension has a negative effect on overall Effectuation construct. We removed this dimension from the list and obtained the following diagram:

Figure 23: Path Coefficients without indicator 'affordable loss'



The good news is that the coefficients of the effect of Effectuation, Causation and Uncertainty to the Export Performance are significant based on Bootstrap results with 5000 re-samples:

\$total.efs						
	Original	Mean.Boot	Std.Error	perc.025	perc.975	
Experimentation -> Flexibility	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	
Experimentation -> Precommitments	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	
Experimentation -> Partnering	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	
Experimentation -> Focusonresources	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	
Experimentation -> Effectuation	0.20257813	0.20178847	0.07570158	0.056884316	0.34707159	
Experimentation -> Causation	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	
Experimentation -> Financial	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	
Experimentation -> Human	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	
Experimentation -> Suppliers	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	
Experimentation -> Governmentreg	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	
Experimentation -> Economic	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	
Experimentation -> Competitors	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	
Experimentation -> Customers	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	
Experimentation -> Exportgov	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	
Experimentation -> PEU	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	
Experimentation -> Exportperformance	0.04233030	0.04447030	0.02675445	0.003635044	0.10621668	
Flexibility -> Precommitments	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	
Flexibility -> Partnering	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	
Flexibility -> Focusonresources	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	
Flexibility -> Effectuation	0.42712985	0.42638293	0.07965560	0.264899893	0.57503767	
Flexibility -> Causation	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	
Flexibility -> Financial	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	

Flexibility -> Human	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Flexibility -> Suppliers	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Flexibility -> Governmentreg	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Flexibility -> Economic	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Flexibility -> Competitors	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Flexibility -> Customers	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Flexibility -> Exportgov	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Flexibility -> PEU	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Flexibility -> Exportperformance	0.08925215	0.09131305	0.04114340	0.017662118	0.17730265
Precommitments -> Partnering	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Precommitments -> Focusonresources	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Precommitments -> Effectuation	0.19836242	0.19685362	0.07368813	0.053790841	0.33660923
Precommitments -> Causation	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Precommitments -> Financial	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Precommitments -> Human	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Precommitments -> Suppliers	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Precommitments -> Governmentreg	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Precommitments -> Economic	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Precommitments -> Competitors	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Precommitments -> Customers	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Precommitments -> Exportgov	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Precommitments -> PEU	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Precommitments -> Exportperformance	0.04144939	0.04185900	0.02370555	0.003999515	0.09417682
Partnering -> Focusonresources	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Partnering -> Effectuation	0.08108567	0.08080116	0.07123199	-0.061875665	0.21761941
Partnering -> Causation	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Partnering -> Financial	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Partnering -> Human	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Partnering -> Suppliers	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Partnering -> Governmentreg	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Partnering -> Economic	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Partnering -> Competitors	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Partnering -> Customers	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Partnering -> Exportgov	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Partnering -> PEU	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Partnering -> Exportperformance	0.01694349	0.01749984	0.01833447	-0.013676806	0.05856693
Focusonresources -> Effectuation	0.25572535	0.25908183	0.09077432	0.086645215	0.43867148
Focusonresources -> Causation	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Focusonresources -> Financial	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Focusonresources -> Human	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Focusonresources -> Suppliers	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Focusonresources -> Governmentreg	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Focusonresources -> Economic	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Focusonresources -> Competitors	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Focusonresources -> Customers	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Focusonresources -> Exportgov	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Focusonresources -> PEU	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Focusonresources -> Exportperformance	0.05343583	0.05462623	0.02913944	0.007953007	0.12175694
Effectuation -> Causation	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Effectuation -> Financial	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Effectuation -> Human	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Effectuation -> Suppliers	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Effectuation -> Governmentreg	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Effectuation -> Economic	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Effectuation -> Competitors	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Effectuation -> Customers	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Effectuation -> Exportgov	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Effectuation -> PEU	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Effectuation -> Exportperformance	0.20895788	0.21482263	0.08718370	0.042610765	0.38285538
Causation -> Financial	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Causation -> Human	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Causation -> Suppliers	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Causation -> Governmentreg	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Causation -> Economic	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Causation -> Competitors	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Causation -> Customers	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Causation -> Exportgov	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Causation -> PEU	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Causation -> Exportperformance	0.20540391	0.21168018	0.08583226	0.044821972	0.38186082
Financial -> Human	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Financial -> Suppliers	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Financial -> Governmentreg	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Financial -> Economic	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Financial -> Competitors	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Financial -> Customers	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Financial -> Exportgov	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Financial -> PEU	0.13484952	0.13457147	0.01211856	0.113022383	0.16041383

Financial -> Exportperformance	-0.04400297	-0.04355034	0.01265297	-0.066788217	-0.01760890
Human -> Suppliers	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Human -> Governmentreg	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Human -> Economic	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Human -> Competitors	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Human -> Customers	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Human -> Exportgov	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Human -> PEU	0.11290501	0.11283702	0.01221932	0.088720722	0.13661845
Human -> Exportperformance	-0.03684222	-0.03669923	0.01144628	-0.059010113	-0.01461609
Suppliers -> Governmentreg	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Suppliers -> Economic	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Suppliers -> Competitors	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Suppliers -> Customers	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Suppliers -> Exportgov	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Suppliers -> PEU	0.29074722	0.28817484	0.02293220	0.243839320	0.33333689
Suppliers -> Exportperformance	-0.09487421	-0.09419011	0.02963076	-0.149907311	-0.03519647
Governmentreg -> Economic	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Governmentreg -> Competitors	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Governmentreg -> Customers	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Governmentreg -> Exportgov	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Governmentreg -> PEU	0.16013839	0.15969007	0.01229595	0.138497824	0.18612216
Governmentreg -> Exportperformance	-0.05225502	-0.05175034	0.01506801	-0.080297746	-0.02104390
Economic -> Competitors	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Economic -> Customers	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Economic -> Exportgov	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Economic -> PEU	0.23578009	0.23476850	0.02657753	0.181743864	0.28618139
Economic -> Exportperformance	-0.07693779	-0.07714831	0.02596420	-0.127227159	-0.02721402
Competitors -> Customers	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Competitors -> Exportgov	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Competitors -> PEU	0.13247474	0.13227556	0.01358782	0.106853663	0.15961805
Competitors -> Exportperformance	-0.04322805	-0.04280478	0.01262468	-0.066941670	-0.01751754
Customers -> Exportgov	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Customers -> PEU	0.15332742	0.15302490	0.01072104	0.133972342	0.17561337
Customers -> Exportperformance	-0.05003252	-0.04968623	0.01464603	-0.076584186	-0.01999368
Exportgov -> PEU	0.15698915	0.15666474	0.01161184	0.136594352	0.18160270
Exportgov -> Exportperformance	-0.05122739	-0.05079225	0.01480776	-0.078874833	-0.02052307
PEU -> Exportperformance	-0.32631166	-0.32657634	0.09856038	-0.506272652	-0.12688566

Checking for measurement: In this case all the variables are treated as reflective, therefore we are looking at the unidimensionality of all of them. Although in some of the indicators the Alpha is lower than 0.7, Rho is high enough to be accepted.

> higher_pls7\$unidim

	Mode	MVs	C.alpha	DG.rho	eig.1st	eig.2nd
Experimentation	A	1	1.0000000	1.0000000	1.000000	0.0000000
Flexibility	A	2	0.7053676	0.8715993	1.544840	0.4551599
Precommitments	A	2	0.5723709	0.8238491	1.400924	0.5990759
Partnering	A	1	1.0000000	1.0000000	1.000000	0.0000000
Focusonresources	A	1	1.0000000	1.0000000	1.000000	0.0000000
Effectuation	A	4	0.5539562	0.7489393	1.730782	0.8909783
Causation	A	4	0.9127671	0.9388868	3.174720	0.4314311
Financial	A	1	1.0000000	1.0000000	1.000000	0.0000000
Human	A	1	1.0000000	1.0000000	1.000000	0.0000000
Suppliers	A	3	0.7266264	0.8465270	1.947092	0.6638217
Governmentreg	A	1	1.0000000	1.0000000	1.000000	0.0000000
Economic	A	3	0.6110461	0.7942724	1.689902	0.7304592
Competitors	A	1	1.0000000	1.0000000	1.000000	0.0000000
Customers	A	1	1.0000000	1.0000000	1.000000	0.0000000
Exportgov	A	1	1.0000000	1.0000000	1.000000	0.0000000
PEU	A	12	0.8692865	0.8939645	5.021149	1.4150318
Exportperformance	A	6	0.8965288	0.9209390	3.963701	0.6801806

Now if we look at the weights of the previously formative indicators, we can see that there is no problem with negative signs and small weights, and all the weightings are significantly differ from 0. Eigen values show that the results are significant:

```
> higher_val7$boot$weights
```

	Original	Mean.Boot	Std.Error	perc.025	perc.975
Experimentation-Q29_2	1.00000000	1.00000000	1.168650e-16	1.00000000	1.00000000
Flexibility-Q29_4	0.47462652	0.46681856	5.743024e-02	0.33041736	0.5600298
Flexibility-Q29_6	0.65879277	0.66448053	6.165497e-02	0.56504254	0.8080379
Precommitments-Q29_8	0.76005189	0.76505633	1.069082e-01	0.58880444	0.9829135
Precommitments-Q29_9	0.41303539	0.39076287	1.448582e-01	0.04204972	0.6109113
Partnering-Q29_10	1.00000000	1.00000000	1.187487e-16	1.00000000	1.00000000
Focusonresources-Q29_12	1.00000000	1.00000000	1.215803e-16	1.00000000	1.00000000
Effectuation-Q29_1	0.31409085	0.30875022	6.573369e-02	0.18039831	0.4282636
Effectuation-Q29_5	0.46347669	0.46132944	5.412863e-02	0.36109993	0.5770842
Effectuation-Q29_7	0.45342825	0.45460967	5.966400e-02	0.35155423	0.5865408
Effectuation-Q29_11	0.26130838	0.25498820	6.391026e-02	0.11314422	0.3689549
Causation-Q30_1	0.27630614	0.27721504	3.739246e-02	0.20781944	0.3531058
Causation-Q30_2	0.25455417	0.25118492	3.845339e-02	0.16814295	0.3196726
Causation-Q30_3	0.28821508	0.28901188	4.082876e-02	0.22864390	0.3615618
Causation-Q30_4	0.30292891	0.30561876	3.708156e-02	0.24748540	0.3849618
Financial-Q27_1	1.00000000	1.00000000	1.249706e-16	1.00000000	1.00000000
Human-Q27_2	1.00000000	1.00000000	1.241788e-16	1.00000000	1.00000000
Suppliers-Q27_3	0.43353960	0.43744843	4.267247e-02	0.36298190	0.5287431
Suppliers-Q27_4	0.39553050	0.39204921	3.712836e-02	0.31590533	0.4643009
Suppliers-Q27_5	0.41381633	0.41306782	4.805652e-02	0.31647040	0.5110267
Governmentreg-Q27_6	1.00000000	1.00000000	1.178733e-16	1.00000000	1.00000000
Economic-Q27_7	0.49543034	0.50317895	6.948362e-02	0.39694174	0.6692375
Economic-Q27_8	0.35200422	0.34423128	4.812006e-02	0.23480266	0.4202331
Economic-Q27_9	0.48689278	0.48646847	6.586224e-02	0.37296147	0.6299091
Competitors-Q27_10	1.00000000	1.00000000	1.350780e-16	1.00000000	1.00000000
Customers-Q27_11	1.00000000	1.00000000	1.285976e-16	1.00000000	1.00000000
Exportgov-Q27_12	1.00000000	1.00000000	1.210621e-16	1.00000000	1.00000000
PEU-Q27_1	0.13450205	0.13390324	1.199787e-02	0.11237422	0.1593927
PEU-Q27_2	0.11272389	0.11227688	1.230035e-02	0.08804124	0.1363262
PEU-Q27_3	0.12763169	0.12750927	1.359265e-02	0.10223846	0.1552295
PEU-Q27_4	0.11255239	0.11058116	1.379711e-02	0.08067511	0.1350339
PEU-Q27_5	0.12125581	0.11987438	1.454106e-02	0.08916720	0.1473764
PEU-Q27_6	0.16080236	0.16054402	1.265920e-02	0.13891247	0.1881395
PEU-Q27_7	0.11603094	0.11598875	1.363130e-02	0.08829239	0.1430193
PEU-Q27_8	0.08232181	0.08072003	1.535108e-02	0.04712810	0.1066028
PEU-Q27_9	0.11571352	0.11445085	1.515682e-02	0.08367779	0.1431058
PEU-Q27_10	0.13276908	0.13262690	1.382911e-02	0.10656316	0.1601920
PEU-Q27_11	0.15314130	0.15274957	1.066269e-02	0.13366125	0.1753612
PEU-Q27_12	0.15674282	0.15653311	1.176876e-02	0.13605525	0.1816682
Exportperformance-Q28_1	0.22991957	0.23049790	2.691941e-02	0.18306979	0.2907146
Exportperformance-Q28_2	0.24800812	0.24888615	3.497111e-02	0.18757098	0.3273944
Exportperformance-Q28_3	0.19917768	0.19992974	3.187176e-02	0.13953999	0.2678366
Exportperformance-Q28_4	0.11883743	0.11615401	3.327717e-02	0.03913342	0.1688348
Exportperformance-Q28_5	0.19958777	0.19875669	2.338639e-02	0.14885938	0.2440244
Exportperformance-Q28_6	0.22995369	0.22991908	2.733659e-02	0.18166814	0.2903941

The general indicators of a model: R^2 is lower now (0.30 vs. 0.41), Mean Redundancy is lower (0.20 vs.0.27), AVE is the same (0.66) but GoF is higher (0.59 vs. 0.40) which assesses overall quality of the model where most constructs are reflective.

```
> higher_pls7$inner_summary
```

	Type	R2	Block_Community	Mean_Redundancy	AVE
Experimentation	Exogenous	0.0000000	1.0000000	0.0000000	1.0000000
Flexibility	Exogenous	0.0000000	0.7682145	0.0000000	0.7682145
Precommitments	Exogenous	0.0000000	0.6860005	0.0000000	0.6860005
Partnering	Exogenous	0.0000000	1.0000000	0.0000000	1.0000000
Focusonresources	Exogenous	0.0000000	1.0000000	0.0000000	1.0000000
Effectuation	Endogenous	0.5268036	0.4293708	0.2261941	0.4293708
Causation	Exogenous	0.0000000	0.7934892	0.0000000	0.7934892
Financial	Exogenous	0.0000000	1.0000000	0.0000000	1.0000000
Human	Exogenous	0.0000000	1.0000000	0.0000000	1.0000000
Suppliers	Exogenous	0.0000000	0.6481584	0.0000000	0.6481584
Governmentreg	Exogenous	0.0000000	1.0000000	0.0000000	1.0000000
Economic	Exogenous	0.0000000	0.5584984	0.0000000	0.5584984
Competitors	Exogenous	0.0000000	1.0000000	0.0000000	1.0000000
Customers	Exogenous	0.0000000	1.0000000	0.0000000	1.0000000
Exportgov	Exogenous	0.0000000	1.0000000	0.0000000	1.0000000
PEU	Endogenous	0.9999954	0.4182807	0.4182788	0.4182807
Exportperformance	Endogenous	0.3094525	0.6574302	0.2034434	0.6574302

```
> higher_pls7$gof
```

```
[1] 0.5887036
```

In the first two models the Effectuation as a whole construct has a higher effect on Export Performance while its indicators have insignificant weights. In the third model where each dimension is treated as independent construct that contribute to a bigger construct, the effect of Effectuation is considerably lower but the indicators of the separate dimensions have improved their weightings due to their reflective treatment. One of the reasons for such results is that our sample size of 103 respondents is too small and homogeneous to be able to properly distinguish between several dimensions of Effectuation construct, but large enough to measure Effectuation as a whole. Therefore assessing the effect of each dimension separately is not very effective. Another reason might be due to some limitations of the only available measurement scale (at the time of writing of this thesis) for the construct Effectuation.

The construct Causation did not have any methodological problems as yet. The reflective measurement for this construct has generated good coefficients. Causation, as stated in the previous chapters of this thesis, demands a good management, marketing, financial management, business planning skills and knowledge as well as the availability of information. It has been discussed several times that in the countries with transition economies there is a lack of all those skills, a solid business education programs, stable business environment and therefore the deficit the needed information. Therefore we thought that there is a possibility of misunderstanding by entrepreneurs in terms of interpreting the

questions related to causation. For example, to the statement to evaluate “We designed and planned export business strategies” entrepreneurs may respond “strongly agree”, while not having a knowledge of what a business strategy is and how it is constructed. In the first seven pilot questionnaires we discovered that all the respondents have chosen “agree” or “strongly agree” options to the statements related to Causation. This has created a suspicion and we decided to include several separate control questions in different parts of a questionnaire which would assess whether Causation techniques such as competitive analysis have been implemented in reality. (See the appendix 4 for details).

Based on the answers provided by the entrepreneurs we have a general sense that almost any of the exporters did not use causal techniques, though we should be careful with our general control questions that have not been scrutinized on several research occasions. The provided answers have let us assume that those coefficients for the construct Causation are much lower in reality than they are in our models and therefore we may even ignore the effect of this construct on company’s Export Performance.

Summarising the results from our first and a third models there is a positive effect of decisions based on Effectual logic on the Export Performance. There is a positive effect of decisions based on Causal logic on company’s export performance. However based on our control questions there is no causal decisions taken in reality. Based on these results and assumptions the effectual decisions lead more to export performance. The next step in our research is to see the effects of the perceived environmental uncertainties. We need to investigate whether the relationship between Effectuation/Causation and Export Performance is different based on the level of perceived uncertainty. There are several ways to analyse this interaction. We explored three methods: Resampling method of a group comparison, Two-Stage Path Modeling Approach, Two-Stage Regression Approach, the results obtained were similar as expected.

Group Comparison Method

This method has been used in the studying the effect of the entrepreneurial characteristics on the selected logic. Path analysis is performed for two different groups and then compared by

using either Bootstrap t-test or Permutation test or both, in order to see whether the differences between the two groups are significant enough to be considered different.

We divided the responses about the threat of uncertainties into two groups: To those that consider the thread is high and those that consider the threat is low. Below are the path plots of these groups and Bootstrap and Permutation test results.

Figure 24: Perception of Uncertainties

Perception of low threats from uncertainty

Perception of high threat from uncertainty



Bootstrap t-test

GROUP COMPARISON IN PLS-PM FOR PATH COEFFICIENTS

Scale of Data: TRUE
 weighting Scheme: centroid
 Selected method: bootstrap
 Num of replicates: 100

\$test

	global	group.HIGH	group.LOW	diff.abs	t.stat	deg.fr
Effectuation->Exportperformance	0.2869	0.3044	0.3719	0.0675	0.4875	101
Causation->Exportperformance	0.1679	0.2311	-0.0209	0.2520	1.4127	101
Uncertainty->Exportperformance	-0.4043	-0.4044	-0.5423	0.1380	0.1407	101
	p.value	sig.05				
Effectuation->Exportperformance	0.3135	no				
Causation->Exportperformance	0.0804	no				
Uncertainty->Exportperformance	0.4442	no				

Inner models in the following objects:

\$global
 \$group1
 \$group2

Permutation Test

GROUP COMPARISON IN PLS-PM FOR PATH COEFFICIENTS

Scale of Data: TRUE
 weighting Scheme: centroid
 Selected method: permutation

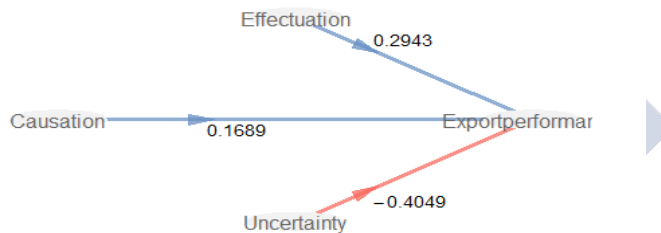
Num of replicates: 100

\$test	global	group.HIGH	group.LOW	diff.abs	p.value	sig.05
Effectuation->Exportperformance	0.2869	0.3044	0.3719	0.0675	0.7228	no
Causation->Exportperformance	0.1679	0.2311	-0.0209	0.2520	0.1089	no
Uncertainty->Exportperformance	-0.4043	-0.4044	-0.5423	0.1380	0.3960	no

Inner models in the following objects:
 \$global
 \$group1
 \$group2

As we can see from the obtained results, none of the path coefficients between the entrepreneurs whose perception of uncertainty threat is low and high are significantly different, meaning that the global (first column) path coefficients should be accepted in each case. (See Figure 25 below)

Figure 25: Global path coefficients



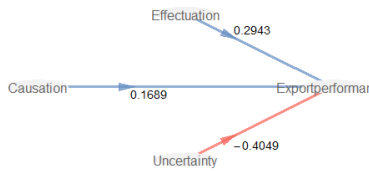
Two-stage path modeling

Two-stage path modeling approach involves two stages. In the first stage we apply a PLS-PM analysis with Effectuation, Causation, Uncertainty and Export Performance. The second stage involves applying another PLS-PM analysis but this time using the scores obtained in the first stage. This implies that we use the latent variable scores from stage 1 in order to create the interaction terms $\text{Modeffect} = \text{Effectuation} \times \text{Uncertainty}$; and $\text{Modcaus} = \text{Causation} \times \text{Uncertainty}$. Once we created the interaction terms Modeffect and Modcaus , the second stage

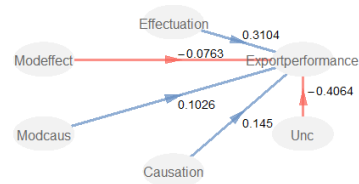
consists of running another PLS-PM analysis but now we replace the original indicators by the scores obtained in the previous stage

Figure 26: Interaction paths 1

PLS-PM without interaction



PLS-PM with interaction



Bootstrap t-test

```
> round(two_pls$boot$paths, 6)
```

	Original	Mean.Boot	Std. Error	perc.025	perc.975
Effectuation -> Exportperformance	0.310411	0.305864	0.092670	0.113440	0.480228
Modeffect -> Exportperformance	-0.076295	-0.084415	0.095092	-0.257821	0.114256
Modcaus -> Exportperformance	0.102624	0.107779	0.083820	-0.083151	0.242468
Causation -> Exportperformance	0.144980	0.149364	0.082425	0.000385	0.311318
Unc -> Exportperformance	-0.406403	-0.397731	0.079137	-0.533645	-0.240361

As it is seen, Modeffect and Modcaus have a very small effect on Export Performance, and their bootstrap confidence interval contains the zero, having a non-significant effect. This means that the moderating effect of the Perceived Uncertainty on the relation between Effectuation and Export performance as well as on the relation between Causation and Export performance is not significant.

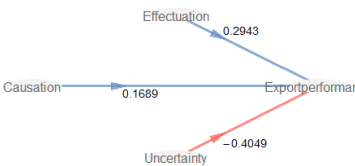
Two-Stage Regression Approach

Another alternative for a two-stage procedure is the two-stage regression approach. The first stage is exactly the same as the two-stage path modeling approach: we apply a PLS-PM analysis without the interaction term. The second stage consists of taking the scores obtained

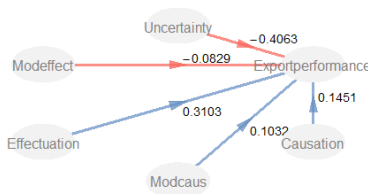
in the first stage but, instead of applying another PLS-PM analysis, we apply a regression analysis with the scores of the first stage.

Figure 27: Interactions Paths 2

PLS-PM without interaction



PLS-PM with interaction



```
> reg$coefficients
```

Uncertainty	Modeffect	Effectuation	Modcaus	Causation
-0.4062761	-0.0828581	0.3102839	0.1032218	0.1451457

The coefficients of the interaction path diagram are very similar to the ones in the two-stage path modeling diagram. Similar to the two-stage path modeling approach, we obtain a very small effect of Modeffect and Modcaus on the Export performance. The only “problem” is that we cannot perform a bootstrap validation with the two-stage regression approach for the significance level of the interaction.

3.10 Discussion of Findings

It is a turn to summarise what we have obtained from our analyses. Our first hypothesis

H1: *There is no impact of the level of entrepreneurial experience, international experience, internationalisation experience, education level on the choice of Effectual logic over Causal logic by Uzbekistan’s exporting entrepreneurs.*

is accepted based on our group analysis. The results showed that the effects of International Experience, Internationalisation Experience, Education level on both Effectuation and Causation are not important. Entrepreneurial Experience in exporting has also insignificant effect on Effectuation. The only difference was obtained in its effect on Causation is significant, which means the more experience has the entrepreneur in exporting the more causation is used. While the R^2 for the relationship between Entrepreneurial Characteristics and Effectuation is acceptable, the same indicator for the relationship between Entrepreneurial Characteristics and Causation is low and does not meet Falk and Miller's (1992) rule. The low R^2 in the relationship between Entrepreneurial Characteristics and Causation demonstrate that this prediction is useless. Moreover we have identified that there is limited or no causation is implemented at all based on our control questions, thus we may not accept this relationship. This is also consistent with our proposition in the first chapter of this thesis that there is a limited possibility to implement causation in the country with a transition economy, therefore the use of this logic cannot be consistent with any of the given entrepreneurial characteristics. From these findings we fully accept our first hypothesis.

We thought that the relationship between the Entrepreneurial characteristics and the choice for both Effectuation and Causation logics might have been effected by some other factors such as, entrepreneur's age, the type of exporting country, type of the product exported (raw material vs. produced product), the percentage of the export sales to total sales, the size of a company, the type of a customers in export (consumers vs. industries), the type of countries in export (transition vs. developed). Thus we performed resampling approach of the group comparison method for each control variable.

From the results we did not find the effect of the age of an entrepreneur, meaning that the global model with its path coefficients does not change according to the age category of an entrepreneur. As well as in our comparison of companies who produce products and who sell raw materials we identified that there is no significant difference in their selected entrepreneurial logic. Similarly, we could not locate any difference in the path model between the companies who sell to consumers and who sell to industries. Although we thought that there should be a difference in decision style between the companies that export only small amount of their products and the companies that dedicated their business mostly on exporting activities, this was not proved in our results. Thus there is no difference in

entrepreneurial logic in the companies who export all of their products and who export only a small share of their products.

We also divided the respondents into groups: Exporting to only transition countries; Exporting to both developed and transition countries, since we thought that in developed countries there is usually much competition and to sell to developed countries a better planning, marketing, high quality products and organized logistics is necessary. Bootstrap analysis process revealed that the data on these groups is not balanced enough and therefore the results from Bootstrap analysis were not reliable to make any conclusions.

In comparison of small and large companies the only difference was in the relationship between Entrepreneur's Internationalization experience and the choice for Effectuation and Causation. In the small companies entrepreneurs with less previous internationalization experience use more effectuation and also more causation (internationalisation experience is negatively correlated with effectuation and causation). While in the large companies entrepreneurs with more previous internationalization experiences use more of effectuation as well as causation logics (internationalisation experience is positively correlated with effectuation and causation). The fact that entrepreneurs sometimes use less effectuation and less causation reveals that entrepreneurs have other type of decisions that do not fit into effectual or causal logics and that was not covered by the Effectuation theory, thus there exist some alternative types of decisions.

Our second and third hypotheses

H2: *The relationship between the Effectual Logic and Export Performance is positive in exporting SMEs in Uzbekistan.*

H3: *The relationship between the Causation Logic and Export Performance is positive in exporting SMEs in Uzbekistan.*

were also proved and accepted by our results in R. According to the Bootstrap analysis the coefficients of Effectuation \rightarrow Exportperformance (0.2943331); Causation \rightarrow Exportperformance (0.1688895); Perceived Environmental Uncertainties \rightarrow Exportperformance (-0.4048718) are positive and significant. The results show that

Effectuation is stronger in leading to a better Export Performance than Causation. According to path analysis in R the entrepreneurs use both logics to achieve a better Export Performance, however the control questions used for causation show that there is very limited use of causal logic in general. This fact demonstrates that entrepreneurs use effectuation and this logic leads to a better export performance. However, the small coefficients for both logics in the path analysis model creates an assumption that the exporting entrepreneurs in Uzbekistan rely on other types of decisions (logics) as well not covered by the Effectuation theory. This can be a possibility to develop this theory so that to be able to cover the type of decisions by entrepreneurs in transition economies. Another reason for these small coefficients might be undiscovered mediating factors that should be investigated in future.

The next hypothesis

H4: *The positive relationship between the Effectual logic and Export Performance is more intense when the Perceived Environmental Uncertainties are higher.*

were not proved by the results of PLS - path modeling.

We needed to investigate whether the relationship between Effectuation/Causation and Export Performance is different based on the level of perceived uncertainty. We explored several ways to analyse this interaction. We mainly utilised Resampling Method of a Group Comparison, Two-Stage Path Modeling Approach, Two-Stage Regression Approach. All the obtained results showed that the entrepreneurs whose perception of uncertainty threat is low and whose perception of uncertainty threat is high are not significantly different. Similarly the results showed that there is no significant moderation by PEU, meaning that the global path coefficients of our main model should be accepted in each case.

In summary our research shows that entrepreneurs in Uzbekistan rely on Effectual logic in their exporting activities while ignoring their perceptions of environmental uncertainties and this leads to a better export performance.

Conclusions and recommendations for future research

In theoretical part of this study we thoroughly reviewed all the studies (existing in the field at the time of writing) related to Effectuation in internationalisation process (see the Appendix 1 for a detailed summary of this review). The exhaustive list of published studies related to effectuation during internationalisation process was not big due to the comparable novelty of the Effectuation theory itself. We found there was a need to rigorously investigate the entrepreneurial logic through the utilisation of effectuation and causation in order to draw more accurate conclusions. Moreover, we identified there was a research gap towards the investigation of the use of effectuation in the export type of internationalisation, in terms of its effects on export performance.

According to the authors of the Effectuation theory, the more experience one has in the entrepreneurship the more effectual he becomes. They also argue that the more formal business education one has with less or no entrepreneurial experience the more he relies on the causation. In this paper we argue that entrepreneurs in Uzbekistan (a country with the economy in transition) mainly use effectual logic and the level of formal education and previous entrepreneurial experiences do not have importance on the selection of Effectual logic. We proposed the reason for this is that there is a limited good quality modern formal business education where knowledge of causal techniques is provided, and there is not enough entrepreneurial expertise (to be effectual) in a highly transforming, dynamic economy (a highly uncertain environment). Thus the number of years for obtained experiences should not change the reliance on Effectual logic. Our results have met our expectations, and revealed the fact that the length of different types of experiences do not have an effect on the preference for Effectual vs. Causal logic.

Previous findings demonstrated positive impact of Effectuation on venture performance, especially when the environment is highly uncertain. Moreover those studies proved that it is effective to use effectual logic during the process of internationalisation of a firm. Therefore we proposed that the relationship between the Effectual Logic and Export Performance is positive in exporting enterprises of Uzbekistan. This proposition also has been accepted based on our results. Moreover due to our control questions we found out that the entrepreneurs do

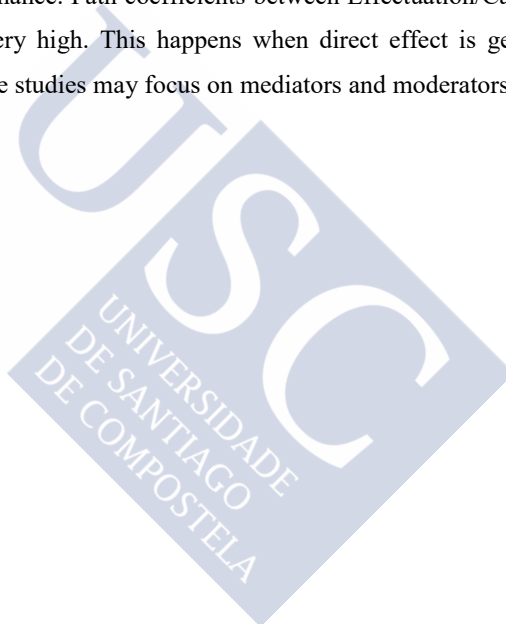
not use causation in their practice. In fact they could not locate what the competitive analysis or strategic planning are (causal techniques) although to the questions measuring the causation majority has selected “agree” or “strongly agree” options.

One of the unexpected findings of this study was that the levels of perceived environmental uncertainties by entrepreneurs are from low to medium, although the business environment in Uzbekistan (like in all other transition economies) is evaluated by international organizations as one of the most uncertain environments. Based on the conclusions of previous studies we have proposed that the positive relationship between the Effectual logic and Performance is more intense when the Perceived Environmental Uncertainties are higher. However, in fact the perceived environmental uncertainties did not change the effect of effectuation on export performance. This might be because the environment in general is not perceived by entrepreneurs as highly uncertain at all whereas Effectuation was utilized highly in the periods of high uncertainty according to literature. Therefore slight changes in the perceived level of uncertainties did not significantly change the effect of effectuation.

Main contributions of the study to entrepreneurship field are the findings that:

- Limited effect of entrepreneurial previous experience and expertise in preferring effectuation to causation in Uzbekistan.
- Limited or no use of causation in the country with transition economy.
- There is no role of perceived level of uncertainty in the relationship between Effectuation and Export Performance.
- Even in a highly uncertain business environment of Uzbekistan (as evaluated by international organizations such as World Bank) the entrepreneurial perceptions of uncertainties are from low to medium level.
- Positive effect of effectuation on company's exporting
- It is the first study of the use of Effectuation in Central Asia, specifically in Uzbekistan.
- It is the first implementation of Partial Least Square Path Modeling method in Effectuation related studies.
- It is the first use of moderated interaction of Perceived Environmental Uncertainty in Effectuation-Export performance relationship

Based on some limitations of this study there are some opportunities for future research. One of these limitations is that the sample size was not big enough to differentiate groups generated by each dimension of the Effectuation construct. The future research should be done based on a bigger survey sample in order to identify the importance and relevance of the dimensions of Effectuation and to find the effects of each on the Export Performance. Moreover the future research should be done across different countries with transition economies to be able to generalise the findings. One more question is generated with our results: what factors mediate between entrepreneurial logic (effectual vs. causal) and the company's export performance. Path coefficients between Effectuation/Causation and Export Performance were not very high. This happens when direct effect is generated by several indirect effects. The future studies may focus on mediators and moderators in this relationship model.



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Appendix

Appendix 1

Table 1: Previous studies with Effectuation theory

Venture performance	Read, et.al., 2010; Read et.al., 2009; Rust, 2010; Klessens, 2012; DeTienne & Chandler, 2010; Garronne, et. al., 2010; Schlüter ¹ , et.al., 2011; Mthantia & Urban, 2015
Entrepreneurial characteristics	Sarasvathy, 2001; Read et. al., 2011; Sanjay Goel & Ranjan Karr, 2006; Ranjan Karri & Sanjay Goel, 2008 ; ENGEL ET.AL., 2014; Engel, et. al., 2013; Engel, Kleijn, Khapova, 2013; Lasse Kröger, 2013
Firm characteristics	Kraaijenbrink, 2011; Sussie Morrish, 2009
Innovation and R&D projects	Daniel Kupper & Burkhart, 2009; Hans Berends, Mariann Jelinek, Isabelle Reymen, and Rutger Stultiens, 2013; Svensrud, Erik, Åsvoll, Håvard, 2012; Mun K. Sitoh, Shan L. Pan, and Ching-Ying Yu, 2014, Anon 2014; Malte Brettel, René Mauer , Andreas Engelen, Daniel Kupper, 2011; Jeffrey G. York, S. Venkataraman, 2010
Governemnt policies related to the management of sme	Dan, 2013
Start up process	Jonas Gabrielsson & Diamanto Politis, 2011; Gaylen et. al., 2011; Jan Brinckmann, Dietmar Grichnik, Diana Kapsa, 2010; Sarasvathy & Dew, 2005; Wiltbank , Read, Dew, Sarasvathy, 2009
Opportunity recognition vs creation	Dew, et al., 2011; Sarasvathy & Dew, 2005; Patricia Doyle Corner & Marcus Ho, 2010; sarasvathy, 2001; Henrik Berglund, 2007; Sanjay B Howmick, 2011; Sarasvathy & Dew 2004; Laaksonen, et. al., 2011; Natasha Eversa & Colm O'Gorman, 2011; Tuija Mainela & Vesa Puhakka, 2009; Elicia Maine, Pek-Hooi Soh , Nancy DosSantos, 2014;
Sme internationalisation	Tuija Mainela & Vesa Puhakka, 2009; Kalinic, et. al., 2012; Harms & Schiele, 2012; Igor Kalinic, Saras D. Sarasvathy , Cipriano Forza, 2013; Witold Nowiński, Alex Rialp, 2012;
Strategic alliances	Eugene Geh, 2011
Strategic entrepreneurship, Exit strategies	Sarasvathy , et.al., 2014; Dawn R. DeTienne, Gaylen N. Chandler, 2010; Isabelle Reymena, Petra Andries, Hans Berends, Rene Mauer, Ute Stephan, Elco van Burg; Jeroen Kraaijenbrink, 2008; Sanjay Bhowmick. 2015; Stuart Read, 2015; Isabelle Reymena, Petra Andries, Hans Berends, Rene Mauer, Ute Stephan, Elco van Burg, 2015; Sussie Morrish, 2009; Wiltbank, Dew, Read and Sarasvathy, 2006
Measurements for effectual/causal logic	Chandler et al., 2007; Perry et al., 2012; Chandler et.al, 2011; Read et. al, 2009; Helmersson & Matsson, 2012; Agnete Alsos et al., 2014
The effectuation theory	Sarasvathy, 2001; 2003; 2005; 2009; 2012; Dew & Sarasvathy, 2007; Terry et al., 2012; Chiles, et al., 2008; Dew, Read, Sarasvathy, Wiltbank, 2008; Greg Fisher., 2012; Johan Frishammar & Svante Andersson, 2009; Read, Sarasvathy, Dew, Wiltbank, 2016; Saras D. Sarasvathy, Sankaran

	Venkataraman, 2010; Sarasvathy & Venkataraman, 2010, Dew, Grichnik, Read, Brinckmann, 2015
Corporate effectuation	Anette Johansson, Alexander McKelvie, 2012; Laura P. Mathiaszyk, Christine Volkmann, 2014; Malte Brettel, Reni Mauer □, Andreas Engelen, Daniel Kupper, 2011; Paul Cook, Rick Yamamoto, 2011; Svensrud, Erik; Åsvoll, Håvard, 2011; Svensrud, Erik; Åsvoll, Håvard, 2012
Service-oriented economy	Hiroyasu Horio, 2008
Effectuation in manufacturing company	Prof. Dr. Malte Brettel, David Bendig, Michael Keller, Niklas Friederichsen, Marius Rosenberg, 2014
International Business-to-business new ventures	Peter Gabrielsson , Mika Gabrielsson, 2013
International entrepreneurship	Saras Sarasvathy, K. Kumar Jeffrey G. York, Suresh Bhagavatula, 2014
Entrepreneurial orientation	Thanti Sibonelo Mthantia & Boris Urban, 2015
Online business	Daniel, Elizabeth M.; Di Domenico, MariaLaura and Sharma, Seema, 2014
Institutional entrepreneurship	Desirée F. Pacheco, Jeffrey G. York, Thomas J. Dean and Saras D. Sarasvathy, 2010
Culture and effectuation	Lasse Kröger, 2013
New market generation	Nicholas Dew · Stuart Read · Saras D. Sarasvathy · Robert Wiltbank, 2010



Appendix 2

Table 2: Prior literature on effectuation during internationalisation

The article	The aim of the study	Methodology	Conclusions
<p>Internationalisation of Entrepreneurial Firms: Generative Co-occurrence of Enactment and Effectuation</p> <p>Sanjay Bhowmick Accepted for presentation at AGSE 2008, Melbourne</p>	<p>To understand the role of Enactment and Effectuation in the internationalisation process of a firm</p>	<p>Case study method with four internationalisation initiatives of three entrepreneurial firms</p>	<p>Draws from enactment concept (Weick, 1979, 1995, 2001) of human action theory and effectuation principle (Sarasvathy, 2001, 2005; Sarasvathy <i>et al.</i>, 2003) from entrepreneurship theory to suggest four propositions to explain the entrepreneurial enactment and effectuation. He argues that</p> <ul style="list-style-type: none"> • In their internationalisation initiatives, entrepreneurs follow simultaneous processes of enactment and effectuation, i.e., they probe market uncertainty through enactment and, simultaneously, they effectuate to limit risk exposure due to that enactment. • The success of an Entrepreneurial internationalisation initiative depends upon the level of both enactment and effectuation, i.e., higher levels of both enactment risk and effectuation control, will result in internationalisation success.
<p>Organising new business in a turbulent context: Opportunity discovery and effectuation for IJV development in transition markets</p> <p>Mainela & Puhakka J Int Entrep (2009) 7:111-134</p>	<p>How is an international joint venture organised in turbulent context through opportunity-discovery and effectuation behaviours?</p> <p>Entrepreneurial behaviour in the organising of an international joint venture (IJV) in Polish transition markets.</p>	<p>A qualitative longitudinal (single) case study of International Joint Venture</p>	<ul style="list-style-type: none"> • There are social activities involved, where entrepreneurial IJV managers are absorbed into the emerging social community of the IJV, gaining from the influences, thoughts, work methods, resources and encouragement of others in the community • Cognitive activities are invoked in discovering and effectuating an entrepreneurial opportunity, where entrepreneurial IJV managers try to understand their environment and messages from the multicultural heritage about new ventures and business in general. They try to make the complicated situation controllable. • The discovery and effectuation Of opportunities are linked in the personal initiatives of the entrepreneurial IJV managers, who take concrete action and try to create the best possible solution for problematic situations. This solution, an opportunity, is not necessarily the most creative or best choice, but to the IJV managers in that situation and that context, it is the most realistic one.

<p>Improvised internationalization in new ventures: The role of prior knowledge and networks</p> <p>Evers & O’Gorman Entrepreneurship & Regional Development Vol. 23, Nos. 7-8, September 2011, 549-574</p>	<p>To find answers to: How do entrepreneurs identify foreign market opportunities and how do they identify foreign market(s) and customers?</p>	<p>Case study research on three Irish-owned shellfish processors</p>	<ul style="list-style-type: none"> • Entrepreneurs with relatively little knowledge or experience of foreign markets were able to discover international opportunities. • The entrepreneurs were not proactive in seeking international opportunities. • The opportunities were assumed by the entrepreneurs, based on what might be described as perfunctory reasoning. • In starting new firms Entrepreneurs often ‘improvise’ the very discovery or identification of an opportunity. • The entrepreneurs’ idiosyncratic prior knowledge and prior work experiences are factors that shaped their choices. • However, the nature of prior knowledge needs to be clarified. The cases suggest that prior knowledge is not necessarily ‘deep’ knowledge nor is it industry or market specific knowledge, but a general experiential knowledge
<p>International entrepreneurship, born globals and the theory of effectuation</p> <p>Svante Andersson Journal of Small Business and Enterprise Development Vol. 18 No. 3, 2011 pp. 627-643</p>		<p>A single case company Alfa, a Swedish born global</p>	<ul style="list-style-type: none"> • The founder’s local and international networks were important • Markets were chosen, primarily where they found distributors with whom they could create a strategic alliance. Distributors were not chosen because they had the best position in the market, but because they were small entrepreneurial distributors that included Alfa’s products as an important part of their product portfolio. • The effective born global leaders are those who can use effectuation logic in unpredictable situations and causation logic in predictable situations. Effectuation logic enhances the understanding of the international behaviour in the born global firms. • Born globals enter many markets in a short time and market choice is not controlled by cultural differences and psychic distance, it is better understood by using effectuation logic, that is, the effectuator uses his own and his companies resources and network and take advantage of opportunities when they are created or observed. • They preferred to co-operate With distributors, so they could take advantage of their knowledge and networks • Alfa preferred strategic alliances with local partners instead of carrying out its own market research on the different markets

<p>Antecedents and consequences of effectuation and causation in the international new venture creation process</p> <p>Harms & Schiele J Int Entrep (2012) 10:95-116</p>	<p>The analysis of the antecedents and consequences of causation and effectuation in the entry mode selection.</p>	<p>Survey on a sample of rapidly growing small and medium enterprises (SMEs), the finalists of the German “Entrepreneur of the Year” contest 2010.</p>	<ul style="list-style-type: none"> • The experienced entrepreneurs tend to apply effectuation rather than causation, while uncertainty does not have a systematic influence. • Entrepreneurs using causation based international new venture creation processes tend to engage in export-type entry modes, while effectuation-based international new venture creation processes do not predetermine the entry mode. • The authors revalidated the scales of Chandler et al. (2009) of international entrepreneurship research. • The concepts need not be diametrically opposed, and companies seem to be able to use both to a large extent. Connected to these would be questions relating to the antecedents and (performance) consequences of different combinations of C&E (Read et al. 2009b). • The psychic distance is related to causation type behaviour. This calls into question the type of uncertainty with which psychic distance is associated. The entrepreneurs perceive psychic distance more as an information gap that they can try to close with formal planning than as a fundamental uncertainty.
<p>An Effectual Approach to International Entrepreneurship: Overlaps, Challenges, and Provocative Possibilities</p> <p>Sarasvathy et.al. Entrepreneurship Theory And Practice · December 2013</p>	<p>The discussion of the links between International Entrepreneurship and Effectuation</p>	<p>Theoretical review of the literature and discussion</p>	<ul style="list-style-type: none"> • While effectual approaches open up and create new markets at low costs of failure, causal approaches can help stabilize and establish leadership in those new markets. • Both are needed in sustaining the growth and survival of established enterprises. • Expert entrepreneurs who choose to build large ventures, as opposed to building a portfolio of smaller ones, have to become good at using both causal and effectual toolboxes and more importantly, to know when and how to use which and also to mix and match as needed.

<p>Drivers and strategies of international new ventures from a Central European transition economy*</p> <p>Nowiski & Rialp JEEMS 02/2013</p>	<p>Why some Eastern European firms (with economies in transition) still manage to internationalize early and rapidly, and how they achieve this? How do they deal with barriers to early (and rapid) internationalization?</p>	<p>A case study with four Polish companies in country with economic transition</p>	<p>Proposition 1. Early internationalization in CEE transition economies is driven not only by push and pull forces observed in developed markets but also by context specific market forces related to domestic market entry barriers and foreign market arbitrage opportunities.</p> <p>Proposition 2. Founding entrepreneurs of international new ventures from CEE transition economies typically display low levels of international (business) experience and international social capital.</p> <p>Proposition 3. INV's from CEE transition economies will try to compensate for their inherent lack of financial resources, international (business) experience and international social capital by applying bricolage, relying on available low cost resources, such as the Internet and domestic ties, before acquiring resources with greater potential for internationalization, such as foreign ties.</p> <p>Proposition 4. Founding entrepreneurs of international new ventures in the context of CEE transition economies compensate for uncertainty stemming from the lack of international (business) experience and international social capital by following effectuation logic (experimentation, flexibility and affordable loss) around the start up phase.</p> <p>Proposition 5. INV's from CEE transition economies, apart from exploiting their technology/design advantages, strongly rely on price differentiation. (this was due to the lower country-of-origin perception by customers than of those from more advanced economies).</p>
<p>A dynamic model of growth phases and survival in international business-to-business new ventures: The moderating effect of decision-making logic</p> <p>Gabrielsson & Gabrielsson Industrial Marketing Management 42 (2013) 1357-1373 □</p>	<p>The role of the Effectuation in the growth phases through which International New Ventures pass as they mature in the high-technology business-to-business field.</p>	<p>Case study approach</p>	<ul style="list-style-type: none"> The entrepreneurial logic is a moderator in the relationships of resources, capabilities, entrepreneurial orientation at one side and learning on growth phases with survival on the other side.
<p>'Expect the unexpected': Implications of effectual logic on the internationalization process</p> <p>Kalinic, Sarasvathy, Forza International Business Review · January 2013</p>	<p>The study of internationalisation process through the lens of effectuation</p>	<p>Five case-studies from Italy, that internationalized production by opening a foreign subsidiary (high level of international commitment). The companies established production units in various Eastern European countries that are the countries with economy in transition.</p>	<ul style="list-style-type: none"> It emerges that the Entrepreneurs instinctively begin approaching the problem with causal modus operandi; nevertheless, if it appears too complex, they pass smoothly to the effectuation logic. The decisions were made once the internationalization was in the process according to the means available and interaction with people. In the subsequent expansions abroad, the entrepreneurs employed a more systematic approach moving closer to casual logic in decision-making due to learning from the first production oriented internationalization It is possible to perform a(n) (unplanned) high level of international commitment in an unknown market and

			<p>(unexpectedly) accelerate the internationalization process despite limited international experience and lack of an international network.</p> <ul style="list-style-type: none"> When adopting the affordable loss principle, the international commitment can precede the development of a general goal in sub-goals and in specific lines of actions. The change of logic adopted to make decisions allowed a(n) (unplanned) rapid switch in the level of foreign commitment and, within three years, to (unexpectedly) evolve from locally oriented companies with passive international activities to global SMEs with FDIs on different continents. That is possible because the switch from causal to effectual logic reduces the amount of information required before acting.
<p>Effectuation and internationalisation: Evidence from the Australian food and beverage sector</p> <p>Miria Lazaris, Small Enterprise Association of Australia and New Zealand 27th Annual SEAA NZ Conference Proceedings 16-18 July Sydney 2014</p>	<p>Examination of the effectual logic during initial internationalisation within the Australian food and beverage sector.</p>	<p>A single case study from the Australian food and beverage sector</p>	<ul style="list-style-type: none"> A planned approach to internationalisation is not possible for several reasons, namely the lack of firm resources such as capital and human resources as well as the lack of previous international experience, and therefore knowledge and networks for internationalisation. Therefore, based on an Effectuation theory perspective, and as presented by the case study, initial internationalisation can be a reactive process based on a perpetual but unplanned process of networking, experimentation, and foreign market entry and exit based on low cost entry modes such as exporting and contract manufacturing.
<p>Decision-making during small and medium-sized enterprises' internationalisation - Effectuation vs. Causation</p> <p>Roger Schweizer J. International Business and Entrepreneurship Development, Vol. 8, No. 1, 2015</p>	<p>How and why SMEs change decision logic related to internationalisation over time?</p>	<p>An embedded case study approach with a Swedish medical technology firm's internationalisation process</p>	<ul style="list-style-type: none"> A decision-maker makes decisions by following the logic of both effectuation and causation independent of the internationalisation stage of a firm. The chosen approach is influenced by the nature of the perceived problem space, existing decision-making routines and heuristics and the inability of decision-makers to learn from previous internationalisation decisions due to the idiosyncratic nature of each foreign expansion.
<p>Effectuation and Networking of Internationalizing SMEs</p> <p>Galkina & Chetty Management International Review April 2015</p>	<p>Focused only on one effectuation principle, the principle of partnership instead of competitive analysis, as a display of effectual logic in the networking of internationalizing SMEs.</p>	<p>An exploratory multiple-case study with seven SMEs from Finland that have established international operations. The context is the internationalization process of Finnish firms to Russia, a turbulent foreign market filled with uncertainty.</p>	<ul style="list-style-type: none"> The network relations of Entrepreneurs represent one of the central aspects of the effectual process. The case studies showed that in general firms' networking activities are crucial for internationalization, and that the whole process of foreign expansion was driven by network relations. Specifically, the effectual logic of networking influences decision-making in the internationalization process. In some cases, respondents find it difficult to specify the exact point in time when the firm made a decision to internationalize, and how the actual foreign expansion started, because it is an organic process of the firms' development. Networking effectually is a conscious choice made by the

			<p>entrepreneurs, and in preference to networking strategically and systematically.</p> <ul style="list-style-type: none"> • The process of networking itself is not purely strategically driven by a predefined network goal or written as a plan, but is also more effectual. • Newly established contacts are added to the existing 'who I know?' part of effectual means, and subsequently used for further networking. • It is supported that effectual partnering differs from serendipitous networking and coincidental meeting of people at random.
<p>The first export order: a marketing innovation Revisited</p> <p>Crick & Crick Journal of Strategic Marketing; 2015</p>	<p>Who tends to be the moving force in commencing exporting? What motivates him (her)?; Under what conditions is exporting likely to be adopted?</p> <p>The paper revisits the topic discussed almost 50 years ago in the context of interviews with 10 owner/managers of internationalising UK firms in the first year of their firm's start-up phase.</p>	<p>Case study approach with 10 newly internationalising UK start-up firms</p>	<ul style="list-style-type: none"> • The effectuation lens advocated by Sarasvathy (2001) was evident to some extent in each of the 10 owner/managers, but planned (causation) decision-making was also a key driving force behind the first export order. Specifically, each had a clear objective of broadly where their firm needed to head which was in line with causation-based planning. • The network-based view (Welch & Welch, 1996, 2004) was also a condition that played a role in all management teams' decision-making, given that risks were trying to be minimised. The existing networks utilised by management teams reduced the risk of operating internationally. This links with the fourth point of institutional factors and the perceived risk of operating in psychologically distant markets (Johanson & Vahlne, 1977). • All interviewees knew the broad direction they wanted their firms to head towards that included the need to export; therefore, planned decision-making was apparent in respect of a larger goal with a single outcome (causation). Various opportunities either domestic or overseas in nature were evaluated over the first year of operation. Each opportunity had potential outcomes and risk/reward considerations, especially tied to obtaining first mover advantage or at least gaining a foothold in a market. Nevertheless, each had perceived affordable losses; hence, effectuation decision-making also played a role in reaching their overall goal (Sarasvathy, 2001). • The respective firms' first export order was a largely planned market innovation rather than unplanned and serendipitous. Even if it appeared that an unsolicited order was received, proactive management teams undertook positive initiatives that resulted in the order such as website development and creating word-of-mouth reputation in niche markets. The exact reason for receiving the order was therefore not as

			serendipitous as might be first thought, i.e. international entrepreneurs made their own luck!
<p>Effectuation and causation: Two decision making logics of INVs at the early stage of growth and internationalisation</p> <p><i>Mlinaric, Obloj, Wasowska</i> Journal For East European Management Studies · March, 2016</p>	<p>What decision-making logic (effectual or causal) is dominant in the new venture internationalisation process and what influences its changes over time?</p> <p>Examined the decision-making logics of an INV over three phases of its growth: pre-start up/venture creation, pre-internationalisation (international preparation), and post-internationalisation (international entry development and growth)</p>	<p>A single case study of a Polish international new venture (INV) operating in the audiobook industry.</p>	<p>Proposition 1. <i>The decision-making logic of an INV may change over time, shifting from effectual to causal (and vice versa). These logic shifts depend on the characteristics of the problem space (i.e., perceived uncertainty).</i></p> <p>Proposition 2. <i>An INV may follow both effectual and causal logic at the same time, depending on the characteristics of the problem space. When making decisions on internationalisation, entrepreneurs are more likely to follow effectual logic. The probability that they will do so increases when entrepreneurs do not possess prior international experience.</i></p> <p>Proposition 3: <i>Network partners act as 'effectual stakeholders', reducing the level of uncertainty faced by an INV.</i></p> <p>Proposition 4: <i>Entry of a VC triggers the shift of the decision-making logic of an INV from effectuation to causation, especially in well-recognized fields (such as domestic markets) characterized by low uncertainty.</i></p> <p>Proposition 5: <i>A VC may accept effectual logic (based on 'entrepreneurial expertise') as an asset when going international (i.e., venturing into a new field characterized by high uncertainty).</i></p>
<p>An appreciative inquiry into the first export order.</p> <p>Crick & Crick , 2016; Qualitative Market Research: An International Journal, Vol. 19 Iss 1 pp. 84 - 100</p>	<p>What lies behind a firm's decision to internationalise?</p> <p>Investigation focuses on decision-making with respect to the initial decision to internationalise and draws on the research of Sarasvathy (2001) who discusses causation versus effectuation approaches</p>	<p>A single case study</p>	<ul style="list-style-type: none"> A combination of causation and effectuation based decision-making is likely to exist in planning, and the two should not be seen as dichotomous. Specifically, decision makers may be easily able to articulate a broad direction in which they want to head, i.e. in line with a causation-based approach. In reality, a series of decisions will be traded off as risk/reward considerations in the form of perceptions of affordable losses in heading towards that broad goal, i.e. more consistent with an effectuation-based approach (Sarasvathy, 2001). As such, the managerial objectives that Crick and Spence (2005) refer to are likely to evolve with respect to the start and continuation of a firm's internationalisation process.

Appendix 3

Table 3: Measurement scale for Effectuation and Causation

Causation (using a 7–point Likert scale)	<ul style="list-style-type: none">- We analyzed the long run opportunities for exporting and decided to export because it was the option providing the best returns.- We researched and selected export target markets and did meaningful competitive analysis.- We designed and planned export business strategies.- We organized and implemented control processes to make sure we met export objectives.
Effectuation (using a 7–point Likert scale)	
Experimentation:	<ul style="list-style-type: none">- The product/service that we now provide for export is substantially different than we first imagined.- We tried a number of different approaches to export until we found a business model that worked.
Affordable loss:	<ul style="list-style-type: none">- We were careful not to commit more resources on exporting than we could afford to lose.
Flexibility:	<ul style="list-style-type: none">- We adapted exporting activities to the resources we had.- We were flexible and took advantage of exporting opportunities as they arose.- We avoided courses of export related actions that restricted our flexibility and adaptability.

Precommitments:

- We used a substantial number of agreements with export customers, suppliers and other organizations and people to reduce the amount of uncertainty.

-We used pre-commitments from export customers and suppliers as often as possible.

- We used agreements with other people and organizations to help deal with changes in our exporting_environment.

Partnering:

- We were able to use family, friends, and other network contacts to provide low cost resources to use in our export activities.

Focus on resources:

- Our export related decision making has been based on the knowledge and resources we control.

- When selecting export opportunities our decision-making is focused more strongly on what we know how to do well than on external factors such as competitors, environmental conditions and uncertainty.

Measurement scale for Perceived Environmental Uncertainties

Local Sources of Uncertainty (relevant to the characteristics of the transition economy):

(using a 5–point Likert scale)

Sources of Uncertainty

Types of Uncertainty

Resource uncertainty

- uncertainty about the amount and the availability of financial resources (within and outside the company)

- uncertainty about the amount and the availability of human resources (within and outside the company)

Supplier uncertainty

- uncertainty about the timing
- quality
- and price of the delivery

Political uncertainty

- unclear or inconsistent regulation
- lack of regulation
- future changes in regulation
- governmental behavior

Economic uncertainty

- uncertainty about inflation rates
- uncertainty about interest rates
- uncertainty about exchange rate with dollar

Export Market Uncertainties

(using a 5–point Likert scale)

Sources of Uncertainty

Types of Uncertainty

Consumer uncertainty

- uncertainty about consumers' preferences
- uncertainty about consumers' characteristics
- uncertainty about the development of the demand

Competitive uncertainty

- uncertainty about competitors' actions
- uncertainty about long-term development of the market
(size and maturity of the demand)

Political uncertainty

- unclear or inconsistent regulation

- lack of regulation
- future changes in regulation
- and governmental behavior of export country

EXPERF scale for the measurement of Export Performance

FP: Financial Export Performance

(using a 5-point Likert scale)

FP1: The firm has been very profitable in export market

FP2: The firm has generated a high volume of sales

FP3: The firm has achieved rapid growth

SE: Satisfaction with Export Venture

(using a 5-point Likert scale)

SE: The firm performance has been very satisfactory

SE: The firm's export has been very successful

SE: The export performance has fully met our expectations

Appendix 4

There are four questions related to the construct Causation that were evaluated with 7-point Likert scale where 1 means “completely disagree and 7 means “completely agree”:

- 1 We analyzed different long run opportunities for exporting and decided to export because it was the option providing the best returns.
- 2 We researched and selected export target markets and did meaningful competitive analysis.
- 3 We designed and planned export business strategies.
- 4 We organized and implemented control processes to make sure we met export objectives.

We included four control questions for them:

1. How did you identify the exporting countries that you are selling now?
 - a) Finding customers and creating contracts (i.e. in trade fairs or in other business events)
 - b) Marketing research and review of trade statistics for several countries
 - c) Other.....
.....
2. Indicate the names of your main competitors in each of your export country
 - 1) Country.....
.....
...
Competitor.....
.....
 - 2) Country.....
.....
...
Competitor.....
.....

- 3) Country.....
.....
...
Competitor.....
.....
- 4) Country.....
.....
...
Competitor.....
.....
- 5) Country.....
.....
...
Competitor.....
.....

3. According to your control processes what percentage of your export sales plan you met in the last year?

4. What are your main strengths related to your export country competitors?

Those who are agree with a statement that says that they analyzed different long run opportunities for exporting before starting an exporting most probably select answer “B” in the first control question. Those who strongly state that they researched and selected export target markets based on competitive analysis will not have a problem in stating the names of the main competitors in each exporting country. Those who state that they created an export strategy will not have a problem in stating main strengths and weaknesses in front of their competitors. And finally those who state that they organized and implemented control processes to meet export objectives will definitely know what percentage of a planned export volume they have accomplished. A questionnaire is attached in the appendix 5.

Appendix 5

Survey Questionnaire

About Entrepreneur

1. Your date of birth:

2. Did you spend time abroad previously? a) Yes

b) No

If yes indicate below the years spent abroad related to the activities:

c) Work related years

d) Not Related to work: years

e) Other

3. Did you have previous experience in export related activities, establishing firms abroad or organizing these activities in any role?

a) Yes

b) No

If yes please indicate the below the years spent in the following activities:

c) Export/Internationalisation related

activities: years

d) Others: years

4. What is your latest obtained degree?

a) Finished school -----

b) College/ Technikum graduate in -----

c) BA degree graduate in-----

d) 5-year Higher education/Master's degree graduate in

e) Other -----

About Company

5. The Formal Type of the company

6. What products do you export?

7. How many employees do you have?

8. How many years are you exporting?

9. Which countries are you exporting to?

10. What percentage of your total sales is %
generated by export?

11. Do you import your inputs to the production of your exporting products from another country?
a) Yes
b) No

If yes, what percentage of the supplies are imported, approximately: %

12. What type of customers are you exporting to?
a) Consumers
b) Industries
c) Consumers and industries

i) How did you identify the exporting countries that you are selling now?
d) Finding customers and creating contracts (i.e. in trade fairs or in other business events)
e) Marketing research and review of trade statistics for several countries
f) Other.....
.....

ii) Indicate the names of your main competitors in each of your export country

6) Country.....
.....
Competitor.....
.....
7) Country.....
.....
Competitor.....
.....
8) Country.....
.....
Competitor.....
.....
9) Country.....
.....
Competitor.....
.....

- 10) Country.....
.....
Competitor.....
.....

iii) According to your control processes what percentage of your export sales plan you met in the last year?

.....

Home country Perceived Environmental Uncertainties:

Resource Uncertainty:

13. How would you describe uncertainty level of the availability of financial resources for your exporting activities?

Low uncertainty High uncertainty

1-----2-----3-----4-----5

If low, can you explain why this uncertainty is low? (because of taken actions?)

Is it low to all other firms in your industry or to only your firm?

Did you take any actions to lower this uncertainty?

14. How would you describe uncertainty level of availability of the human resources for your exporting activities within your company? And outside your company in labour market so that to acquire whenever it is necessary?

Within company

Low uncertainty High uncertainty

1-----2-----3-----4-----5

In labour market

Low uncertainty High uncertainty

1-----2-----3-----4-----5

If low, can you explain why the uncertainty is low? (because of taken actions?)

Is it low to all other firms in your industry or to only your firm?

Did you take any actions to lower this uncertainty?

Supplier Uncertainty:

15. How would you rate the uncertainty related to the delivery timing, the quality of goods and the price changes in goods provided by your suppliers?

Delivery timing

Low uncertainty

High uncertainty

1-----2-----3-----4-----5

The quality of goods

Low uncertainty

High uncertainty

1-----2-----3-----4-----5

The price changes in goods

Low uncertainty

High uncertainty

1-----2-----3-----4-----5

If low, can you explain why the uncertainty is low? (because of taken actions?)

Is it low to all other firms in your industry or to only your firm?

Did you take any actions to lower this uncertainty?

Political Uncertainty:

16. How uncertain do you feel about the frequency of future changes in regulation and legislation?

Low uncertainty

High uncertainty

1-----2-----3-----4-----5

If low, can you explain why this uncertainty is low? (because of taken actions?)

Is it low to all other firms in your industry or to only your firm?

Did you take any actions to lower this uncertainty?

17. Do you consider the availability of the regulations related to your firm's exporting activities are all existent and developed or very uncertain?

Low uncertainty

High uncertainty

1-----2-----3-----4-----5

If low, can you explain why this uncertainty is low? (because of taken actions?)

Is it low to all other firms in your industry or to only your firm?

Did you take any actions to lower this uncertainty?

Economic Uncertainty

18. How do you perceive the level of uncertainty about the rates of inflation?

Low uncertainty

High uncertainty

1-----2-----3-----4-----5

If low, can you explain why this uncertainty is low? (because of taken actions?)

19. How do you perceive the level of uncertainty about the exchange rate with dollar?
,

Low uncertainty

High uncertainty

1-----2-----3-----4-----5

If low, can you explain why this uncertainty is low? (because of taken actions?)

20. How do you perceive the level of uncertainty about interest rate?

Low uncertainty

High uncertainty

1-----2-----3-----4-----5

If low, can you explain why this uncertainty is low? (because of taken actions?)

Export Market Perceived Environmental Uncertainties:

Name of the Country (select one, the main exporting country)

Type of the Consumer: a) consumers, b) industries, c) consumers & industries

Competitive uncertainty

21. What is the level of uncertainty of possible effect of competitors' actions on your firm's performance?

Low uncertainty

High uncertainty

1-----2-----3-----4-----5

If low, can you explain why this uncertainty is low? (because of taken actions?)

Is it low to all other firms in your industry or to only your firm?

Did you take any actions to lower this uncertainty?

Consumer uncertainty

22. How would you describe the level of uncertainty related to the preferences of your customers?

Low uncertainty

High uncertainty

1-----2-----3-----4-----5

If low, can you explain why this uncertainty is low? (because of taken actions?)

Is it low to all other firms in your industry or to only your firm?

Did you take any actions to lower this uncertainty?

23. How certain are you in terms of characteristics of your customers?

Low uncertainty

High uncertainty

1-----2-----3-----4-----5

If low, can you explain why this uncertainty is low? (because of taken actions?)

Is it low to all other firms in your industry or to only your firm?

Did you take any actions to lower this uncertainty?

24. How certain are you in terms of future stable demands for your products?

Low uncertainty

High uncertainty

1-----2-----3-----4-----5

If low, can you explain why this uncertainty is low? (because of taken actions?)

Is it low to all other firms in your industry or to only your firm?

Did you take any actions to lower this uncertainty?

Political uncertainty

25. How uncertain do you feel about the frequency of future changes in export country's regulation and legislation?

Low uncertainty

High uncertainty

1-----2-----3-----4-----5

If low, can you explain why this uncertainty is low? (because of taken actions?)

26. Do you consider the availability of the export country regulations related to your firm's exporting activities are all existent and developed or very uncertain?

Low uncertainty

High uncertainty

1-----2-----3-----4-----5

If low, can you explain why this uncertainty is low? (because of taken actions?)

27. Please Rate the following uncertainties in terms of created danger to your firm. How much each factor affects your business?

UNCERTAINTY TYPE

LEVEL OF THREAT

Financial resources

Weak Threat

Strong Threat

1-----2-----3-----4-----5

Human resources availability

Weak Threat

Strong Threat

1-----2-----3-----4-----5

The delivery timing of your suppliers

Weak Threat

Strong Threat

1-----2-----3-----4-----5

The quality of goods provided by your suppliers

Weak Threat

Strong Threat

1-----2-----3-----4-----5

The Role Of The Entrepreneurial Logic In Export Performance

The price changes in goods provided by your suppliers	<div style="display: flex; justify-content: space-between; font-size: 0.8em;"> Weak Threat Strong Threat </div> <div style="text-align: center; margin-top: 5px;"> 1-----2-----3-----4-----5 </div>
Governmental regulations	<div style="display: flex; justify-content: space-between; font-size: 0.8em;"> Weak Threat Strong Threat </div> <div style="text-align: center; margin-top: 5px;"> 1-----2-----3-----4-----5 </div>
Rates of inflation	<div style="display: flex; justify-content: space-between; font-size: 0.8em;"> Weak Threat Strong Threat </div> <div style="text-align: center; margin-top: 5px;"> 1-----2-----3-----4-----5 </div>
The exchange rate with dollar	<div style="display: flex; justify-content: space-between; font-size: 0.8em;"> Weak Threat Strong Threat </div> <div style="text-align: center; margin-top: 5px;"> 1-----2-----3-----4-----5 </div>
Interest rate	<div style="display: flex; justify-content: space-between; font-size: 0.8em;"> Weak Threat Strong Threat </div> <div style="text-align: center; margin-top: 5px;"> 1-----2-----3-----4-----5 </div>
Actions of your competitors	<div style="display: flex; justify-content: space-between; font-size: 0.8em;"> Weak Threat Strong Threat </div> <div style="text-align: center; margin-top: 5px;"> 1-----2-----3-----4-----5 </div>
Preferences of your customers	<div style="display: flex; justify-content: space-between; font-size: 0.8em;"> Weak Threat Strong Threat </div> <div style="text-align: center; margin-top: 5px;"> 1-----2-----3-----4-----5 </div>
Export country's governmental regulations	<div style="display: flex; justify-content: space-between; font-size: 0.8em;"> Weak Threat Strong Threat </div> <div style="text-align: center; margin-top: 5px;"> 1-----2-----3-----4-----5 </div>

About the company

- iv) What are your main strengths related to your export country competitors?

28. Please indicate how much you agree or disagree with the following statements about your export performance (where strongly disagree is 1 and strongly agree is 5):

Export Performance	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree
	1	2	3	4	5
FP1: The firm has been very profitable in export market					
FP2: The firm has generated a high volume of sales					
FP3: The firm has achieved rapid growth					
SE: The firm's export performance has been very satisfactory					
SE: The firm's export has been very successful					
SE: The export performance has fully met our expectations					

About Entrepreneur and the Firm

29. Please indicate how much you agree or disagree with the statement on the left

	Completely disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Completely Agree
	1	2	3	4	5	6	7
1. <u>Experimentation</u> : The product/service that we now provide for <u>export</u> is substantially different than we first imagined and offered.							
2. We tried a number of different approaches <u>to export</u> until we found a business model that worked.							
3. <u>Affordable loss</u> : We were careful not to risk so much money on <u>exporting</u> that the company would be in real trouble financially if things didn't work out.							
3,1. We were careful not to commit more resources <u>on exporting</u> than we could afford to lose							
4. <u>Flexibility</u> : We adapted <u>exporting activities</u> to the resources we had.							
5. We were flexible and took advantage <u>of exporting</u> opportunities as they arose.							

	Completely disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Completely Agree
	1	2	3	4	5	6	7

6. We avoided courses of export related actions that restricted our flexibility and adaptability.

7. Precommitments:

We used a substantial number of agreements with export customers, suppliers to reduce the amount of uncertainty.

8. We used pre-commitments from export customers and suppliers as often as possible.

9. We used agreements with other people and organizations to help deal with changes in our exporting environment.

10. Partnering:

We were able to use family, friends, and other network contacts to provide low cost or free resources to use in our export activities.

10.1. Friends, family, and other network contacts provided services that we otherwise would have had to pay for.

11. Focus on resources:

When selecting export opportunities our decision-making is focused more strongly on what we know how to do well than on external factors such as competitors, environmental conditions and uncertainty.

	Completely disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Completely Agree
	1	2	3	4	5	6	7

12. Our export related decision making has been based on the knowledge and resources we control.

29. Please indicate how much you agree or disagree with the statement on the left. How close or far the statements from the reality

Causation:	Completely disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Completely Agree
	1	2	3	4	5	6	7
1. We analyzed different long run opportunities for exporting and decided to export because it was the option providing the best returns.							
2. We researched and selected <u>export</u> target markets and did meaningful competitive analysis.							
3. We designed and planned <u>export</u> business strategies.							
4. We organized and implemented control processes to make sure we met <u>export</u> objectives.							

31. Please indicate your ratings of the activities in the following statements:

1. EO1

In general, I and the top managers of my firm favor:

A strong emphasis on the marketing of tried-and-true products or services	1	2	3	4	5	6	7	A strong emphasis on technological leadership, innovations
---	---	---	---	---	---	---	---	--

2. EO2

How many new lines of products or services has your firm marketed since its establishment?

No new lines of products or services	1	2	3	4	5	6	7	Very many new lines of products or services
---	---	---	---	---	---	---	---	--

3. EO3

Changes in product or service lines have been mostly of a minor nature	1	2	3	4	5	6	7	Changes in product or service lines have usually been quite dramatic
--	---	---	---	---	---	---	---	--

EO4; EO5; EO6

In dealing with its competitors, my firm:

4. Typically responds to actions that competitors initiate	1	2	3	4	5	6	7	Typically initiates actions to which competitors then respond
--	---	---	---	---	---	---	---	--

5. Is very seldom the first business to introduce new products/services, administrative techniques, operating technologies, etc	1	2	3	4	5	6	7	Is very often the first business to introduce new products/services, administrative techniques, operating technologies, etc.
---	---	---	---	---	---	---	---	--

6. Typically seeks to avoid competitive clashes, preferring a "live-and-let-live" posture	1	2	3	4	5	6	7	Typically adopts a very competitive, "undo-the- competitors" posture
--	---	---	---	---	---	---	---	--

7. EO7

In general, the top managers of my firm have:

A strong proclivity for low-risk 1 2 3 4 5 6 7
projects (with
normal and certain rates of
return)

A strong proclivity for high-risk
projects (with
chances of very high returns)

8. EO8

In general, the top managers of my firm believe that:

Owing to the nature of the 1 2 3 4 5 6 7
environment, it is best
to explore it gradually via
cautious, incremental
behavior

Owing to the nature of the
environment, bold, wide-
ranging acts are necessary to
achieve the firm's objectives

9. EO9

When confronted with decision-making situations involving uncertainty, my firm

Typically adopts a cautious, 1 2 3 4 5 6 7
"wait-and-see"
posture in order to minimize
the probability of making
costly decisions

Typically adopts a bold, aggressive
posture in order to maximize the
probability of exploiting potential
opportunities

General Conclusions

In this thesis we studied the Effectuation concept in relation to entrepreneurship and export performance in transition economies. In doing so we performed three different studies. In the first study we examined theoretically the concept of uncertainty given in the Effectuation theory and the concept of uncertainty existent in the transition economies. Building on Effectuation theory and Institutional theory, we brought together specifications of an effectual space and compare them with ones of transition economies. A special focus was given to the discussion of uncertainties in Central Asian countries and other former Soviet Union countries, where the source of uncertainties is a lack of stable institutional structure and therefore a highly volatile business environment.

No previous study was done which links Institutional and Effectuation Theories. Each component of an effectual space was discussed in the current practices of entrepreneurs in Uzbekistan. The discussion of uncertainties, stemmed from institutional settings and government regulations, through the lens of effectuation theory is the first in the literature and this is our contribution to this field. Moreover we opened a new discussion area within the Effectuation theory by proposing that the ideal effectual space with high (Knightian) uncertainty, together with goal ambiguity and environmental isotropy is found in the transition markets. And this by its turn brings forward the idea that the entrepreneurs in the transition economies are 'forced' to use effectual logic by their business environments.

During the review of a literature in this study one of the additional discoveries for the authors was that the whole governments which are in transition are ruled by using whether effectual or causal approach. The economic transition process in Central Asian countries seems to be the process of effectuation, as all the countries started with what they were left in hands after the collapse of the Soviet Union and what knowledge and experiences they had, and whom they knew for the partnerships. This is consistent with what says Sarasvathy, entrepreneurs begin with three categories of "means": they know who they are, what they know, and whom they know—their own traits, tastes, and abilities; the knowledge corridors they are in; and the social networks they are a part of. At the level of the firm, the corresponding means are its physical resources, human resources, and organizational resources. At the level of the

economy, these means become demographics, current technology regimes, and sociopolitical institutions such as property rights. (Sarasvathy, 2001a). All the Central Asian countries had to heavily rely on what they had in their initial stages of the transition, their major natural resources, human capital and a destroyed institutional environment.

In contrary, the institutional management of the Eastern European countries was mainly done by using plans which included criteria for conditions to entry to European Union (EU) that can be called a causal approach to the management of the country. The causal approach is possible when there is a low level of uncertainty and availability of funds to accomplish the set objectives, as in the case of EEC, where they had access to EU funds (initially pre-Accession funding and latterly Structural Funds). This has encouraged new member states to adjust their institutional structures and processes to increase their chances of securing this funding, some of which were used to promote and support entrepreneurship at the national and regional levels.

As a resident of one of the countries with a transition economy the author observed that the entrepreneurship in the transition economies is blossoming, growing very quickly, the markets are getting richer from day to day. This fact was backed up by the data provided by international organizations such as World Bank. It was observed that while entrepreneurs face high uncertainty challenges, the countries with transition economy achieved a tremendous growth in their share by Micro-Small-Medium- sized enterprises (MSME). While still many studies highlight uncertainty as a negative condition and relate it to a worse performance by the firms.

In the second chapter we aimed to investigate the effect of an uncertainty on the share of MSME's. Since we presumed that uncertainty makes the entrepreneurs to change the entrepreneurial logic to effectual instead of failing the business, we proposed that there is no effect of the level of environmental uncertainty on the share of MSMEs. Based on the growth indicators in many countries with transition economies we argued that the effect of the uncertainty in the business environment which comes from institutional vulnerability is not significant and that even in highly uncertain transition process the MSME sector size will still grow.

The transition economies have recently allowed the existence of private sector therefore there is a huge demand for yet not existing products and services. The markets are not as rich as ones in the developed economies, and in order to enjoy the windows of opportunities there should be a strong continuous growth in the size of the private sector and mainly of MSME sector. Therefore the effects of institutional uncertainty are overcome by the market demands.

The previous studies that focused on the effect of uncertainty or the effect of the environment attempted to compare all the countries at once without taking into account any specific characteristics of regions, countries or even groups of countries (see for example: Rocha, 2012; West & Drnevich, 2010; Ghosal & Ye, 2015). This has led to ignore the fact that the MSME sector in transition economies is still new and therefore they have less share by MSMEs comparing to the one in developed economies and not necessarily due to the impact of environment. Our study has taken into account which type of economy belongs each country.

We performed a Mixed effects model using a two level model. Mixed effects regression is a more sophisticated approach that can incorporate individual growth characteristics in a single model, which simultaneously estimates individual country curves and a sample average curve (Goldstein, 2010). Mixed effects consist of fixed effects (i.e., average parameter values for the entire sample) and also *random effects* that are different for each group or even each country. The mixed-effects model is usually used when data is clustered in some manner, as in this paper since there are developed economies, emerging economies and transition economies. Moreover transition economies are clustered within different regions based on their recent histories.

Moreover, in this chapter we measured the levels of transition uncertainty, by adapting the measure of uncertainty created by Susjan and Redek (2008). We have adapted this Uncertainty index taking into consideration specific factors related to Former Soviet transition economies and specifically Central Asian countries.

Based on our results we concluded that the effect of the environmental uncertainty on the size of MSME sector is not consistent and therefore we may say that the level of uncertainty does

not determine the size of MSME sector of the country. This finding is important and the focus in the future should not be on whether the uncertainty effects or not, but what kind of businesses grow better in highly uncertain environments and how environmental uncertainty impacts on the quality and strategies of MSMEs. Additionally, further research should be done to find out what factors give attractive opportunities for entrepreneurs in running a business in a highly uncertain environments of transition economies.

The discussion of an effectual problem space in Uzbekistan and the discovery of insignificant effect of an uncertainty on the growth of MSME's in different countries provided a background for our principal question which was investigated in the third chapter. In this we studied whether entrepreneurs use effectual or causal logics and how this effects on their performance.

We identified there was a research gap towards the investigation of the use of effectuation in the export type of internationalisation, in terms of its effects on export performance. We provided detailed review of a prior research that focused on the effectuation vs. causation logics within the internationalisation process of firms in the literature review part of a chapter 3. According to the review of this literature several all the studies confirmed that effectuation logic is useful in the internationalisation process and that all the companies in the studies relied primarily on their available resources and networks in their internationalisation process. Therefore it was possible to perform an unplanned high level of international commitment in an unknown market and unexpectedly accelerate the internationalization process despite limited international experience and lack of an international network (Kalinic, Sarasvathy, Forza, 2013). However the authors could not locate the investigation about the role of effectuation in export performance and moreover in exporting from the transition economies therefore it was the focus of this study.

Data analysis was performed using Partial Least Squares (PLS), a structural equation modeling technique that uses a principal-component-based estimation approach (Chin 1998). We applied partial least squares path modeling (PLS-PM) in R program (Sanchez, 2013) to test the hypotheses. The R program allows the use of moderators and the implementation of both reflective and formative scales (Sanchez, 2013) and PLS-PM doesn't impose any distributional assumptions on the data.

The results from our first models showed that there is a positive effect of decisions based on Effectual logic on the Export Performance. Based on our control questions there is no causal decisions taken in reality and this fact was expected from the beginning. The limited effect of entrepreneurial previous experience and expertise in preferring effectuation to causation in Uzbekistan also was one of the expected findings.

Unexpected finding was that the perception of uncertainties by the entrepreneurs in Uzbekistan were not high, were from low to moderate. And therefore the results showed that there is no role of perceived level of uncertainty in the relationship between Effectuation and Export Performance, because we could not compare the relationship between those who are suffering high uncertainty level and who are not suffering so much from the uncertainty. Whereas this country is one of the worst countries in terms of its business environment according to the Heritage Foundation's ratings.

Strong contributions of this paper are that this is the first study which studied Effectuation in Central Asia, specifically in Uzbekistan. It is the first implementation of Partial Least Square Path Modeling method in Effectuation related studies. And it is the first use of moderated interaction of Perceived Environmental Uncertainty in Effectuation-Export performance relationship. The results of this thesis can be used in the teaching process of entrepreneurship and economics field of studies. For the researchers this study will be a good source in learning how to use PLS-PM modeling in entrepreneurship studies and what can be the main issues related to the measurement tools for latent variables. Further research is welcomed to study the same research question but with a much bigger sample and from different countries. When we have a better, wider sample from different countries we are more able to compare not only the relationship between the entrepreneurial logic and export performance but also the effect of the indeed different levels of perceived environmental uncertainties on this relationship.